

**APPENDIX I**  
**SITE MAP, FIELD EXPLORATION, LOG OF TEST BORINGS**



Wall 349L: Looking south (from southbound lane).



Wall 346L: Looking north (from southbound lane).

## SITE PHOTOGRAPHS

(12 Mar 02)

Route 15/56 Separation Managed Lanes, Stage 1  
Task Order No. 284016  
San Diego, California





Wall 357R: Looking east (from southbound lane), wide-angle view.



Wall 357R: Looking north (from southbound lane), close-up view.

## SITE PHOTOGRAPHS

(9 May 02)

Route 15/56 Separation Managed Lanes, Stage 1  
Task Order No. 284016  
San Diego, California

PLATE I-2





Wall 357R1 (ascending slope), Wall 357R (center median): Looking south-southeast (from southbound lane).



Wall 353R: Looking north from north end of wall.



Wall 353R: Looking south at north end of wall.

2002\1394.013\1394.013site-photograph4.dsf

### SITE PHOTOGRAPH

(12 Mar 02)

Route 15/56 Separation Managed Lanes, Stage 1

Task Order No. 284016

San Diego, California

PLATE I-4





Wall 358L: Looking south-southeast.



Wall 361L1: Looking south from crest of slope above wall.

## SITE PHOTOGRAPHS

(9 May 02)

Route 15/56 Separation Managed Lanes, Stage 1  
Task Order No. 284016  
San Diego, California





At Wall 361L: Looking north from south end of wall.



At Wall 361L: Looking north along proposed alignment.

2002\1394.013\1394.013site-photographs.dsf

**SITE PHOTOGRAPHS**  
(12 Mar 02)  
Route 15/56 Separation Managed Lanes, Stage 1  
Task Order No. 284016  
San Diego, California

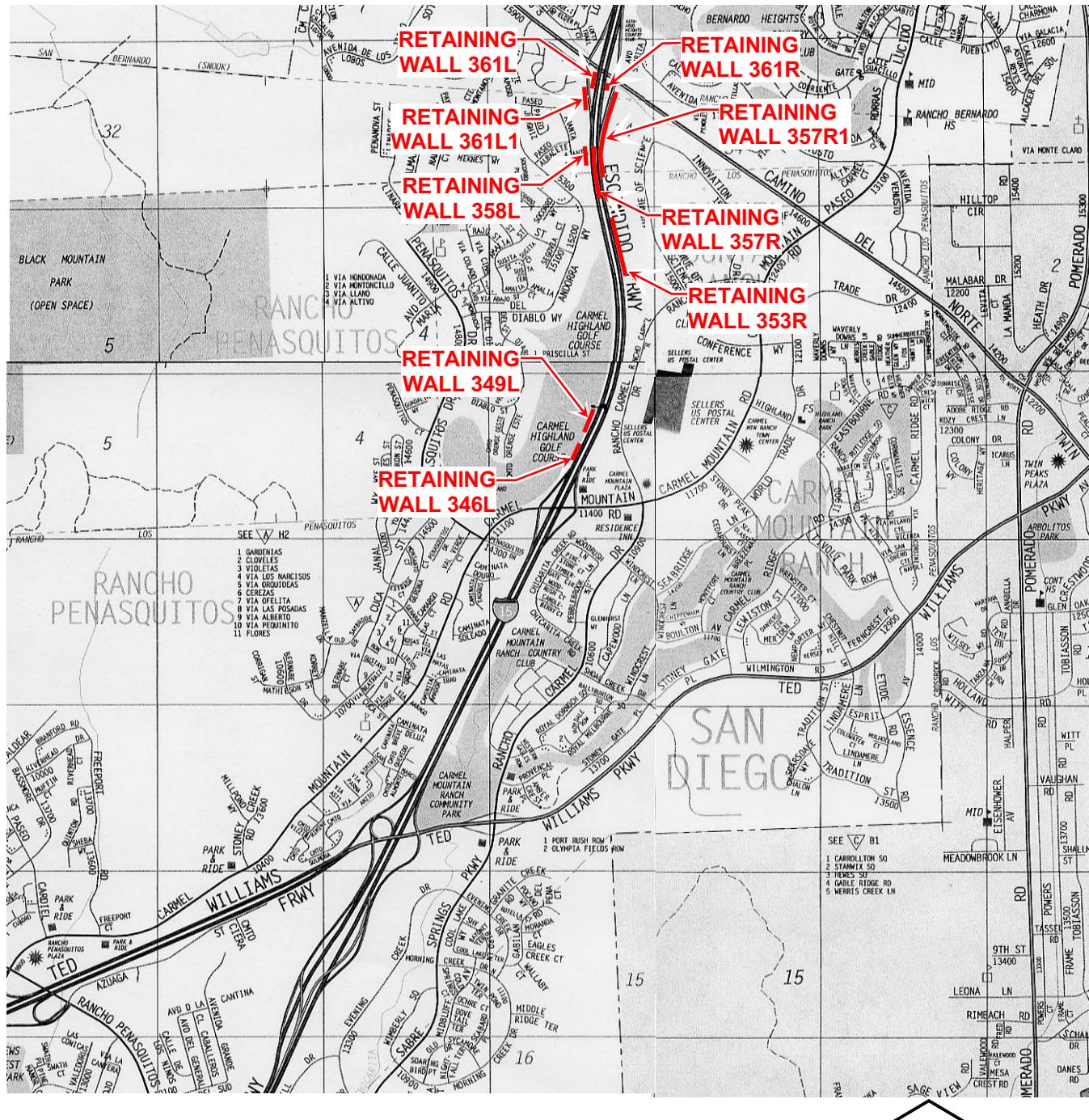
PLATE I-6





Wall 361R: Looking north.

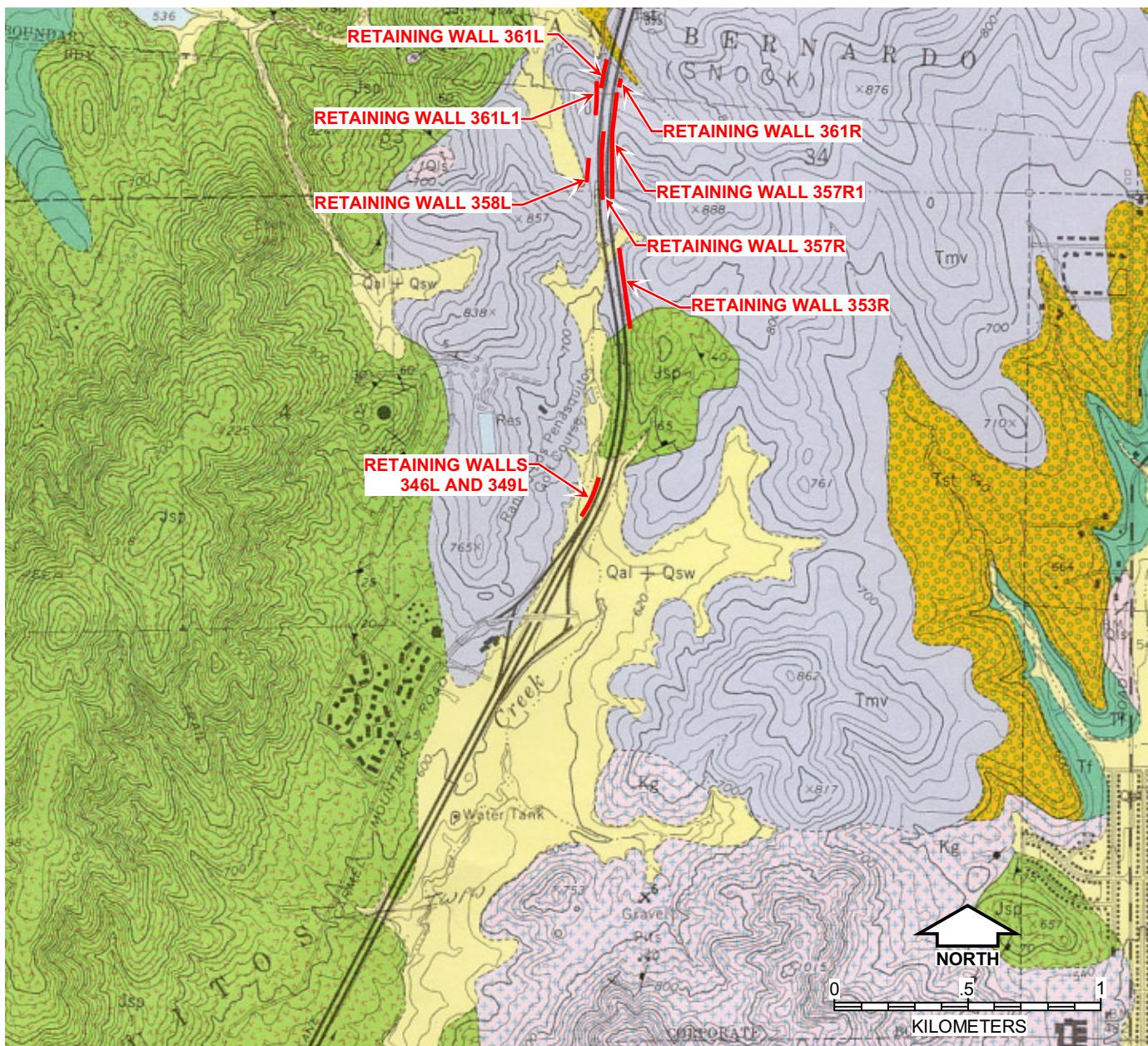




**VICINITY MAP**  
Route 15/56 Separation Managed Lanes, Stage 1  
Task Order No. 284016  
San Diego, California

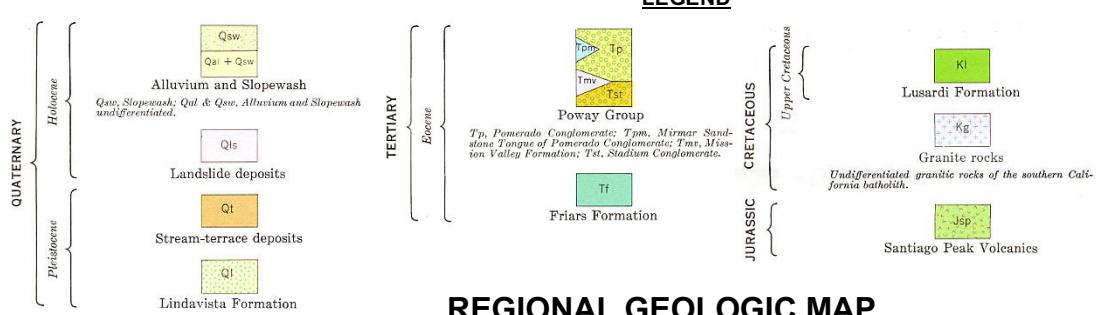
FIGURE I-1





**BASE MAP SOURCE:** CDMG, Geology of the Poway Quadrangle, San Diego County, California  
by Michael P. Kennedy and G. L. Peterson (1975).

#### LEGEND



- Contact  
(dashed where approximately located;  
dotted where concealed)
- ↗ Strike and dip of bedding  
in sedimentary rocks.
- ↗ Strike and dip of bedding  
in metasedimentary rocks.
- ↗ Strike and dip of joint.
- ↗ Strike of vertical joint.
- Qls Landslide with direction of movement indicated by arrows.
- △<sup>±11</sup> Clay sample locality.
- ×<sup>±11</sup> Pit, quarry, or mine.
- ⊕<sup>±11</sup> Fossil mollusk locality.
- \* Fossil coccolith locality.

**REGIONAL GEOLOGIC MAP**  
Route 15/56 Separation Managed Lanes, Stage 1  
Task Order No. 284016  
San Diego, California

**FIGURE I-2**



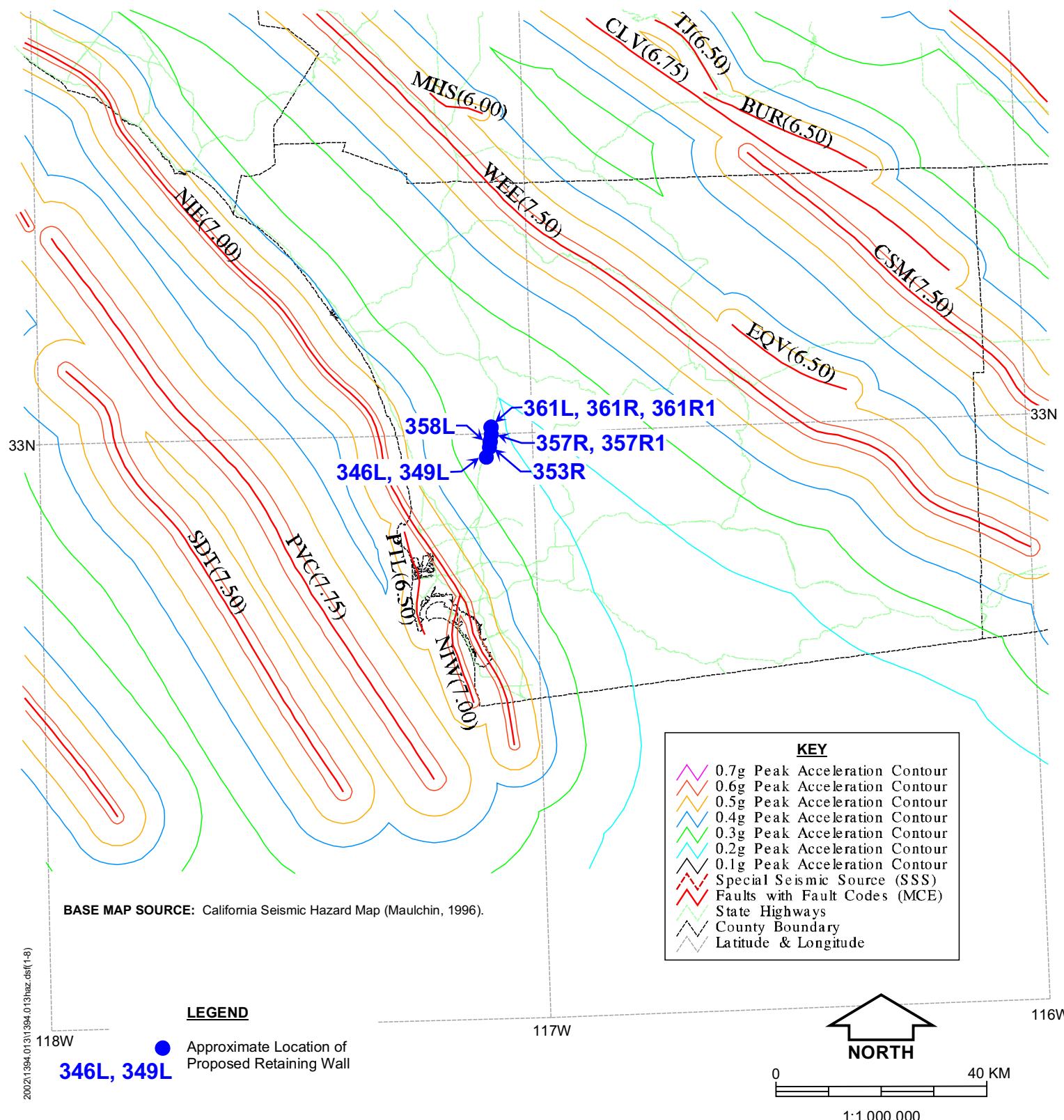
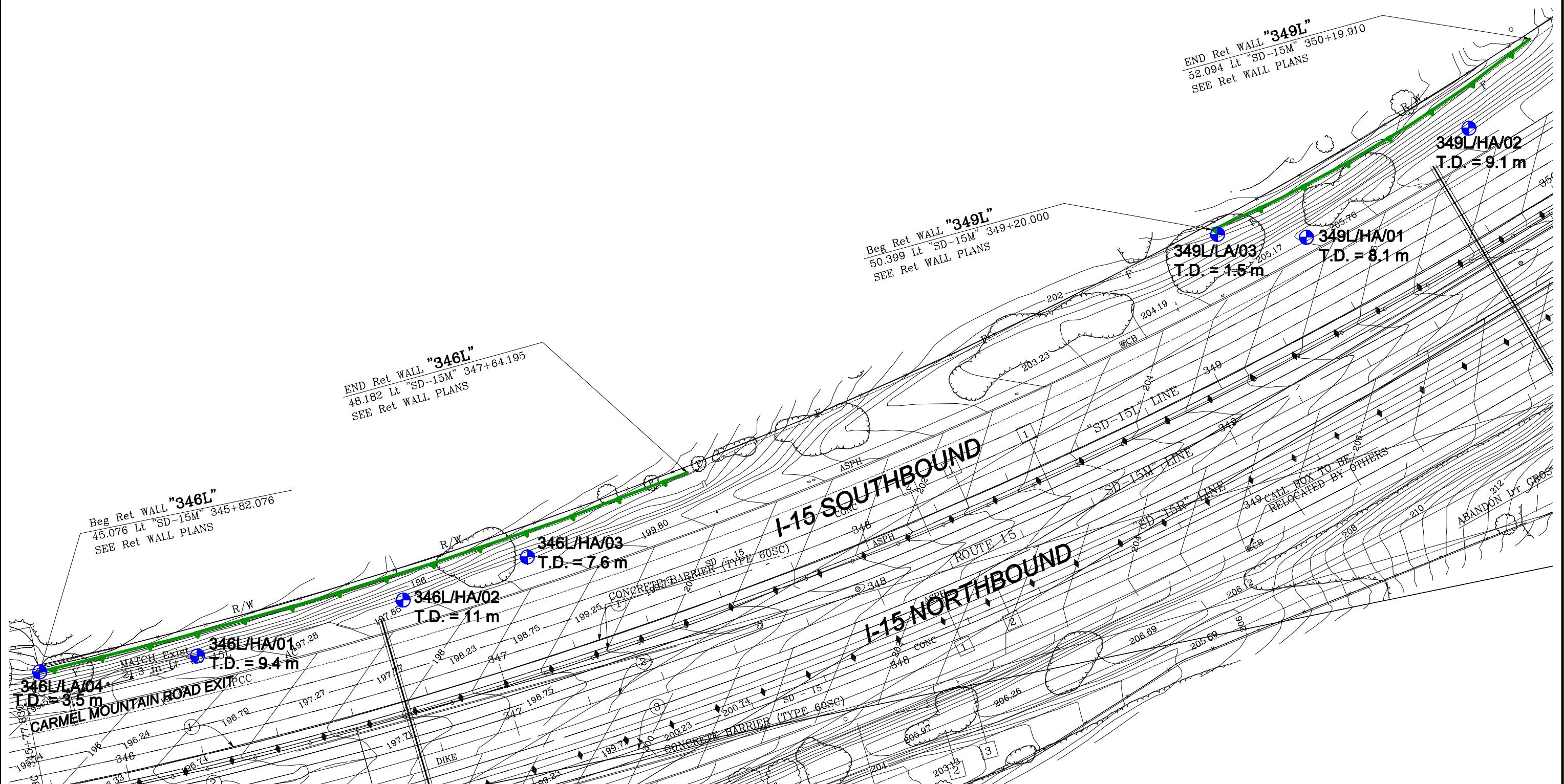


FIGURE I-3



20021394.0131394.013haz.ds(18)



## LEGEND

## **Approximate Test Boring Location**

### Proposed Retaining Wall

T.D. = Total Depth (m)

**HA = Hollow Stem Aug**

**LA = Limited Access**



0 50 M

1:1000

4

**FUGRO WEST, INC.**  
820 McGrath St., Suite 100, Ventura, CA 93003  
Tel.: (805) 650-7000 Fax: (805) 650-7010

**FUERO**

## TEST BORING LOCATION PLAN

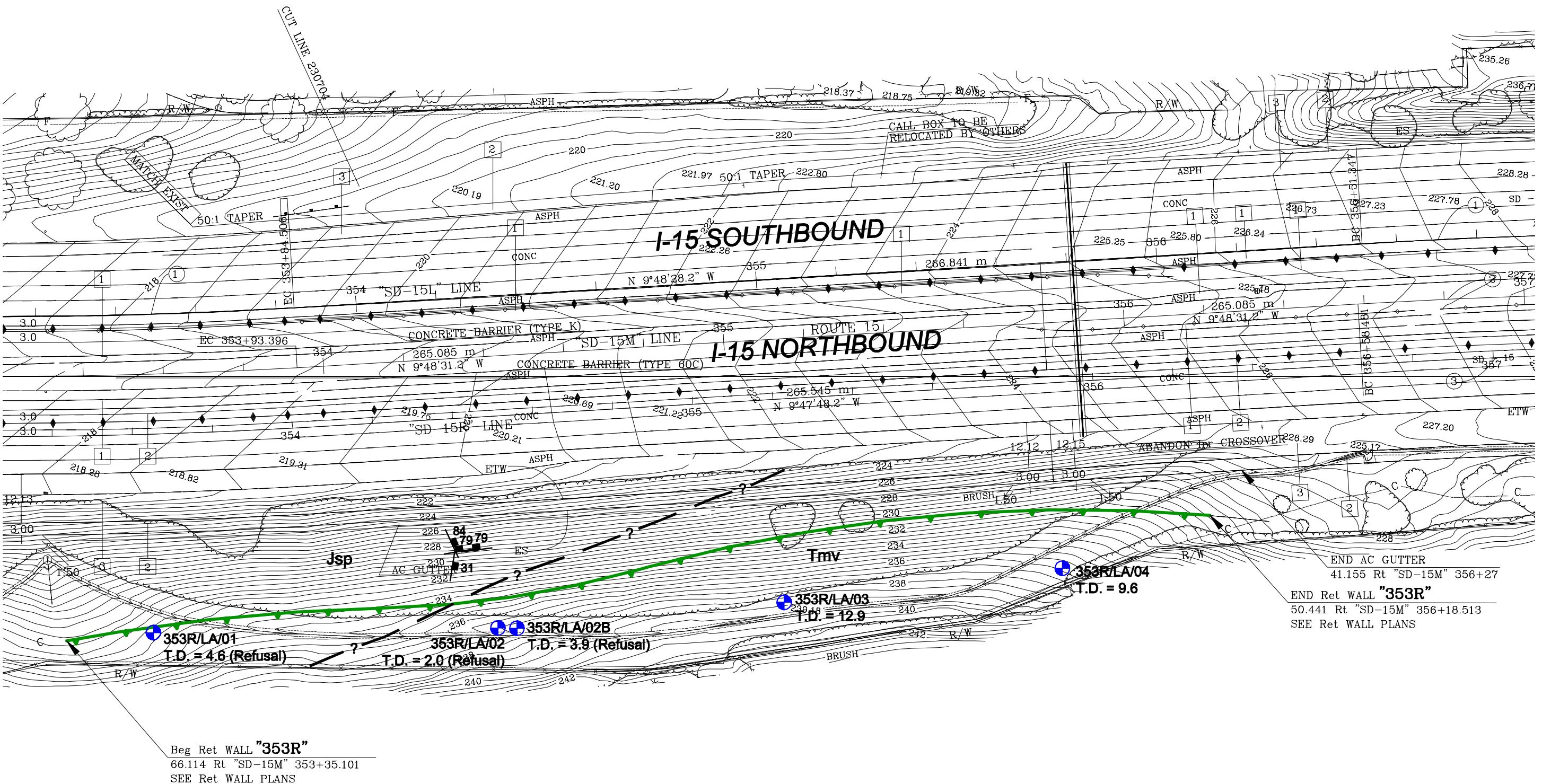
## **Retaining Walls 346L and 349L**

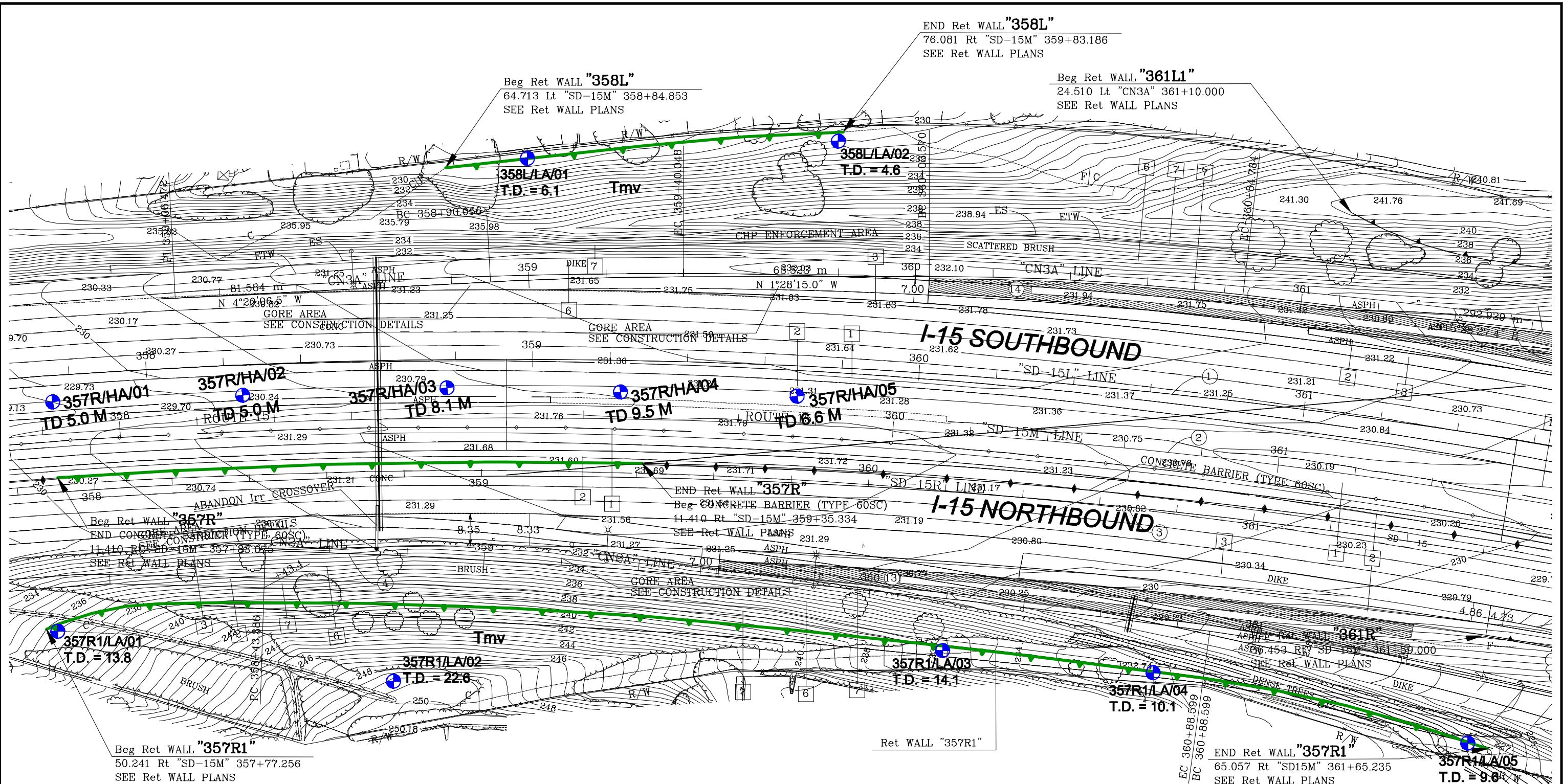
## **Route 15/56 Separation Managed Lanes, Stage 1**

## **Task Order No. 284016**

## **San Diego, California**

R  
L  
(la)





## LEGEND

- The diagram illustrates the site plan with various borehole locations marked by blue dots and numbers. A green line indicates the proposed retaining wall. A legend box contains symbols for a blue dot (approximate test boring location), a green line (proposed retaining wall), and a blue circle with a cross (Tmv). Another legend box contains symbols for a blue dot (approximate test boring location), a green line (Proposed Retaining Wall), and a blue circle with a cross (Tmv). Below the diagrams, definitions are provided for T.D., LA, and HA.

**Approximate Test Boring Location**

**Tmv**

**Mission Valley Formation**

**Proposed Retaining Wall**

**T.D. = Total Depth (m)**

**LA = Limited Access**

**HA = Hollow Stem Auger**

Reproduced from Caltrans Drawing  
Layout Sheets L-18, L-19, and L-20  
(latest revision 09-01-02).

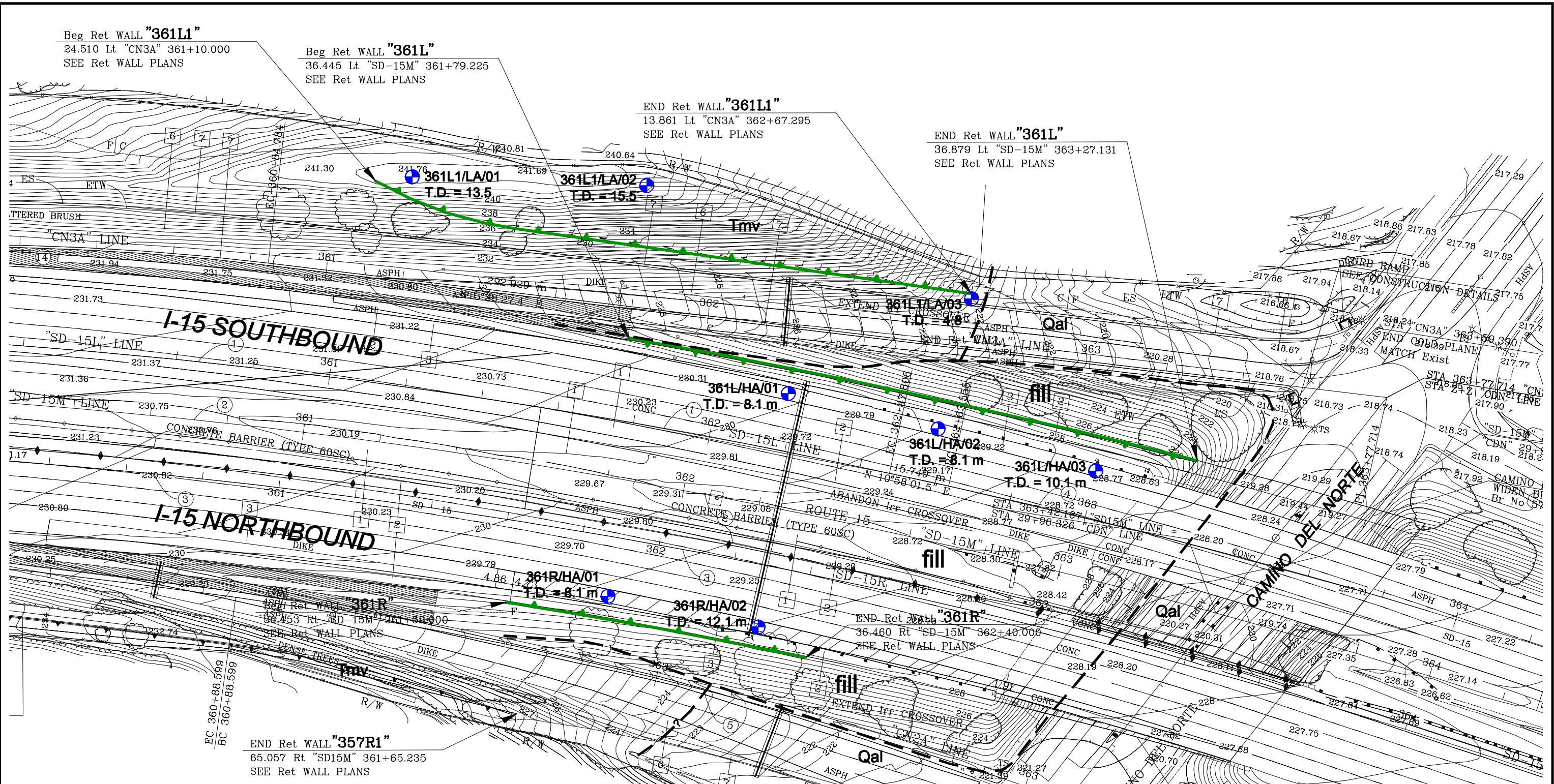


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## **TEST BORING LOCATION PLAN**

**Route 15/56 Separation Managed Lanes, Stage 1**  
**Task Order No. 284016**  
**San Diego, California**



## LEGEND

- |      |                                  |  |  |
|------|----------------------------------|--|--|
|      | Approximate Test Boring Location |  | Fill                                     |
|      | Proposed Retaining Wall          |  | Alluvium                                 |
| T.D. | = Total Depth (m)                |  | Mission Valley Formation                 |
| LA   | = Limited Access                 |  | Approximate Location of Geologic Contact |
| HA   | = Hollow Stem Auger              |  |  |

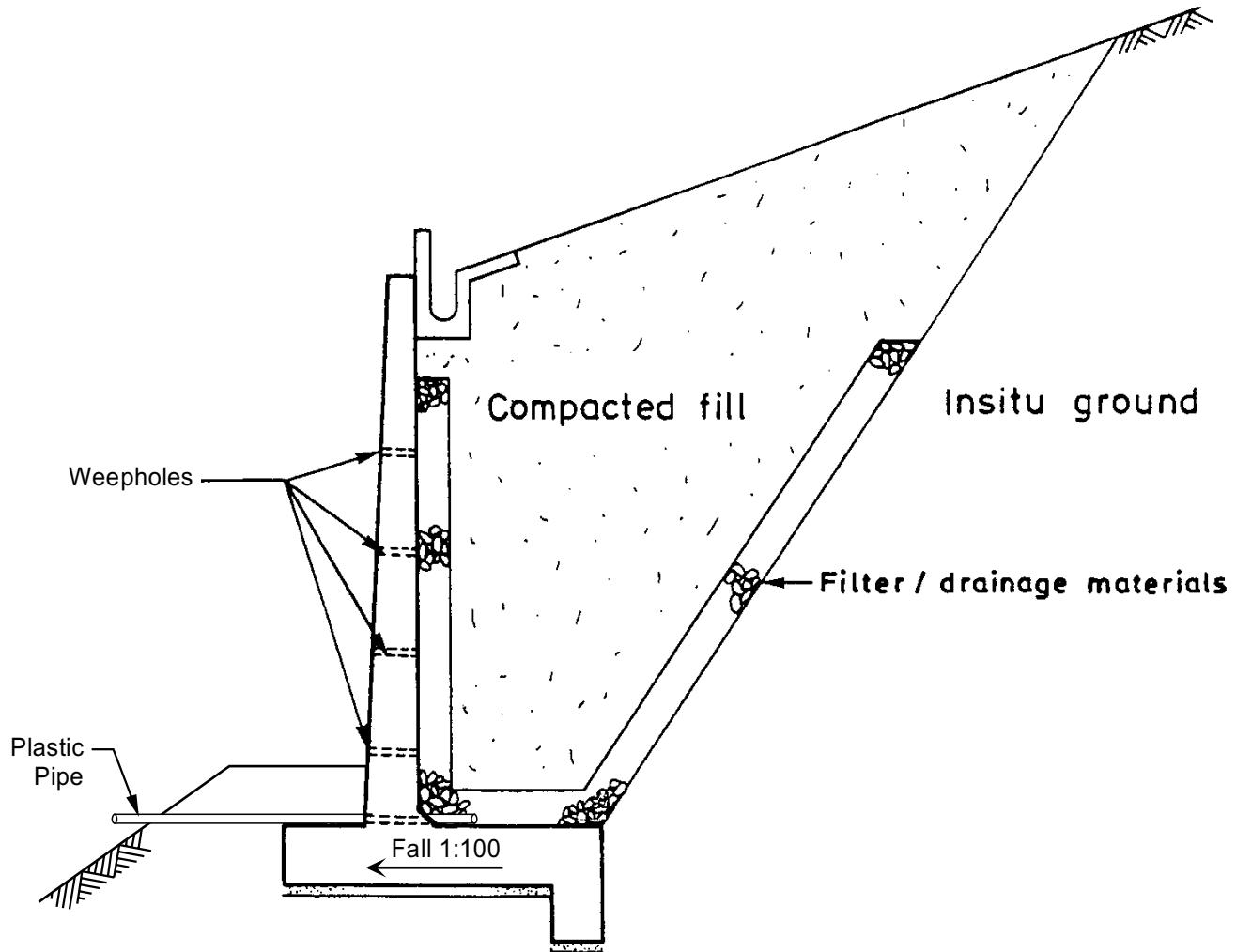


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**TEST BORING LOCATION PLAN  
Retaining Walls 361L, 361L1 and 361R  
Route 15/56 Separation Managed Lanes, Stage 1  
Task Order No. 284016  
San Diego, California**

Reproduced from Caltrans Drawing  
Layout Sheets L-18, L-19 and L-20  
(latest revision 09-01-02).

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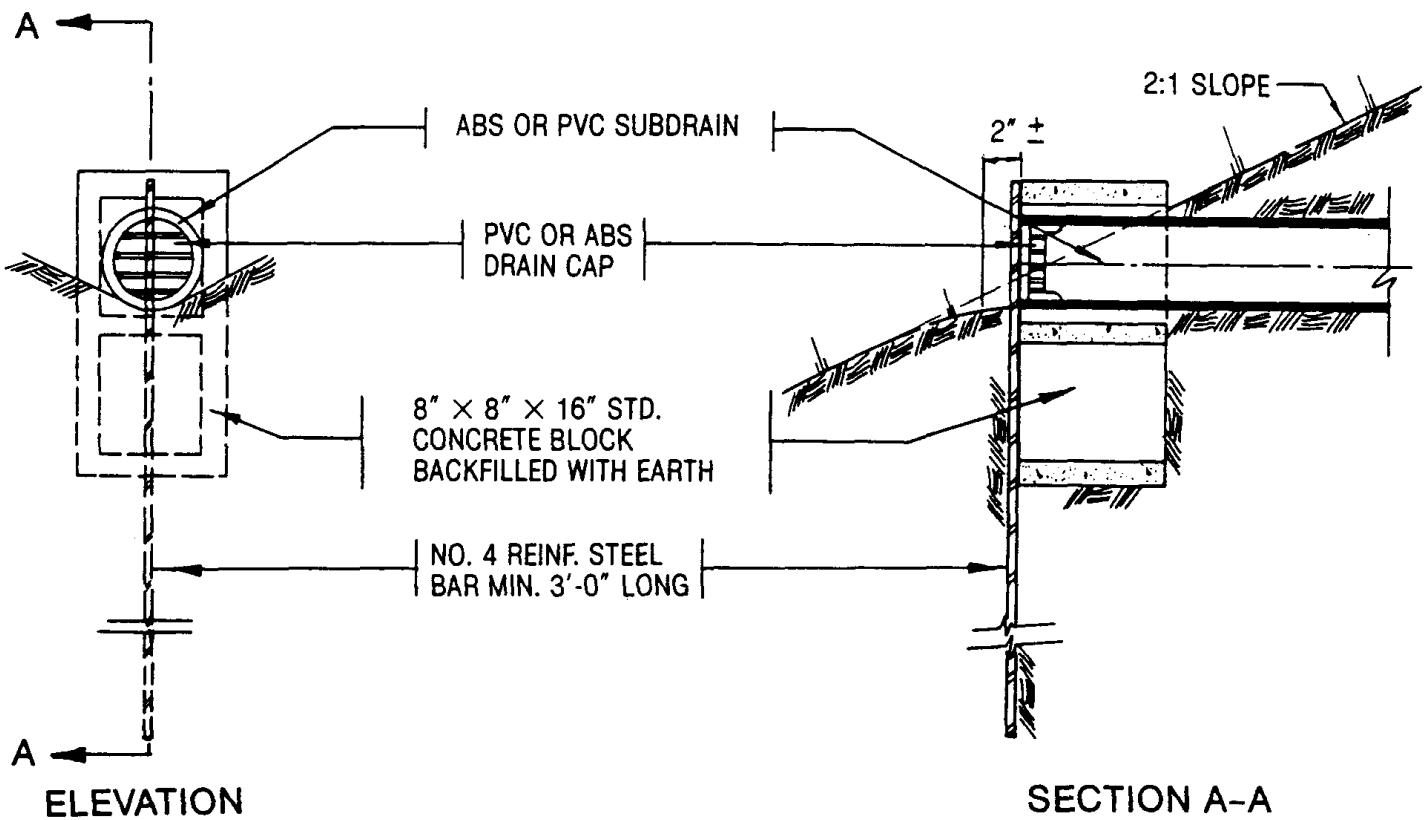


2002\1394.013\1394.013drainage.ds\1\2.p1

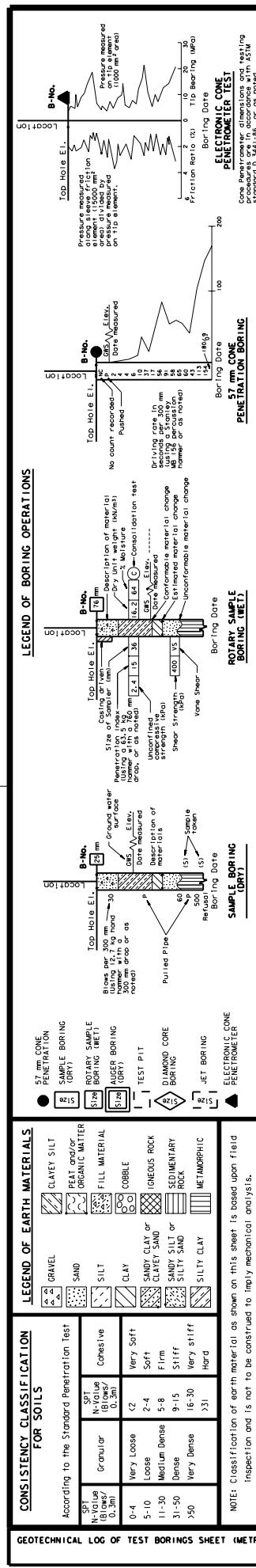
**ILLUSTRATION OF RETAINING WALL DRAINAGE**  
Route 15/56 Separation Managed Lanes, Stage 1  
Task Order No. 284016  
San Diego, California

FIGURE I-8

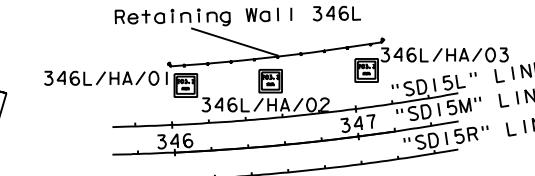




**SUBDRAIN MARKER DETAIL**  
Route 15/56 Separation Managed Lanes, Stage 1  
Task Order No. 284016  
San Diego, California



**Caltrans**  
**Metric**



## PLAN

SCALE: 1:2000

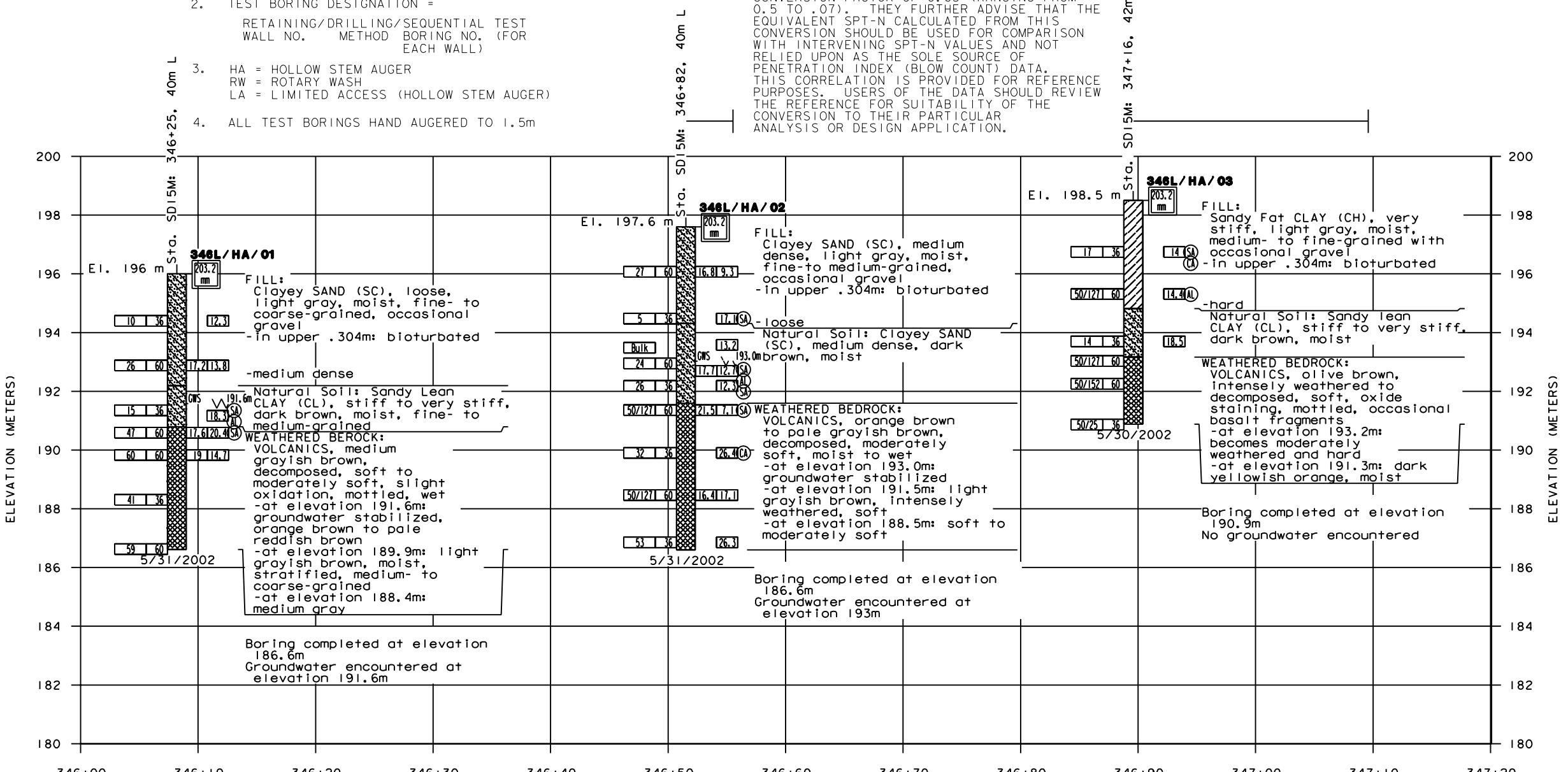
- THE PENETRATION INDEX SHOWN REPRESENTS THE UNCORRECTED (FIELD) BLOW COUNT (N) FOR A STANDARD PENETRATION TEST (SPT) SAMPLER (36MM DIAMETER) OR A CALIFORNIA SAMPLER (60MM DIAMETER). DMG SP117 (1999) ADVISES THAT N-VALUES OBTAINED FROM A CALIFORNIA SAMPLER CAN BE ROUGHLY CORRELATED TO SPT-N VALUES USING A CONVERSION FACTOR OF 0.63 (RANGING FROM 0.5 TO .07). THEY FURTHER ADVISE THAT THE EQUIVALENT SPT-N CALCULATED FROM THIS CONVERSION SHOULD BE USED FOR COMPARISON WITH INTERVENING SPT-N VALUES AND NOT RELIED UPON AS THE SOLE SOURCE OF PENETRATION INDEX (BLOW COUNT) DATA. THIS CORRELATION IS PROVIDED FOR REFERENCE PURPOSES. USERS OF THE DATA SHOULD REVIEW THE REFERENCE FOR SUITABILITY OF THE CONVERSION TO THEIR PARTICULAR ANALYSIS OR DESIGN APPLICATION.

DIST	COUNTY	ROUTE	KILOMETER POST	TOTAL PROJECT	HEET NO	TOTAL SHEETS
II	SD	15/56	M30.4/M35.4 14.4/15.2			

*C. R. Stroop*  
GEOTECHNICAL PROFESSIONAL  
No. 44964  
Ex. 3/31/06

**PLANS APPROVAL DATE**  
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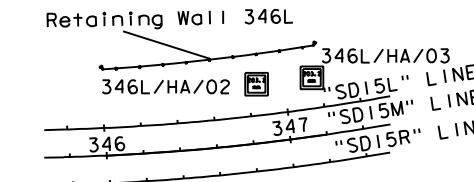
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4820 McGrath St, Suite 100  
Ventura CA 93003



**Boring Nos: 346L/HA/02, 03**  
Project Name: I-15 Managed Lanes (Unit 1)  
Retaining Wall 346L



DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
II	SD	15/56	M30.4/M35.4 14.4/15.2	2	2
GEOTECHNICAL PROFESSIONAL 11/13/02					
C.R. Stroop NO. 44964 EXP. 3/31/06					
PLANS APPROVAL DATE					
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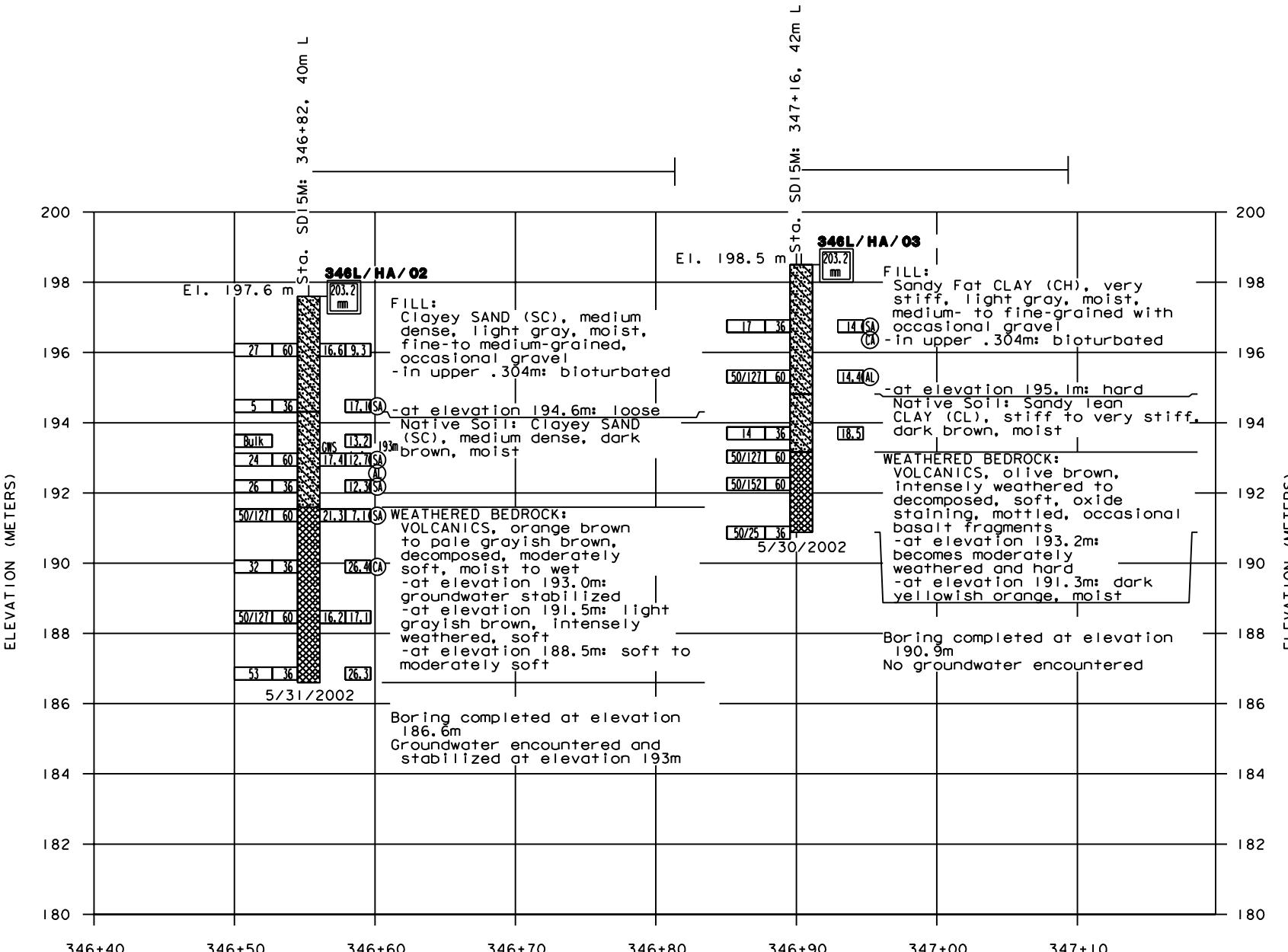


## PLAN

SCALE: 1:2000

### NOTES:

- THE DESCRIPTIONS AND CLASSIFICATIONS OF ROCK AND/OR SOIL INCLUDING CONSISTENCY AND RELATIVE DENSITY DESCRIPTORS, USED BY THE FIELD PERSONNEL FOR THE EXPLORATION TEST HOLES SHOWN ON THIS SHEET ARE BASED ON THE "SOIL AND ROCK LOGGING CLASSIFICATION MANUAL", OFFICE OF MATERIAL AND FOUNDATIONS (FORMERLY OFFICE OF STRUCTURAL FOUNDATIONS), AUGUST 1996. COPIES OF THIS MANUAL ARE AVAILABLE FOR INSPECTION AND/OR REPRODUCTION SUBJECT TO APPLICABLE OFFICE POLICIES, BY ANY BIDDER OR CONTRACTOR UPON WRITTEN REQUEST.
- TEST BORING DESIGNATION = RETAINING/DRILLING/SEQUENTIAL TEST WALL NO. METHOD BORING NO. (FOR EACH WALL)
- HA = HOLLOW STEM AUGER  
RW = ROTARY WASH  
LA = LIMITED ACCESS (HOLLOW STEM AUGER)
- THE PENETRATION INDEX SHOWN REPRESENTS THE UNCORRECTED (FIELD) BLOW COUNT (N) FOR A STANDARD PENETRATION TEST (SPT) SAMPLER (36MM DIAMETER) OR A CALIFORNIA SAMPLER (60MM DIAMETER).



DESIGN OVERSIGHT		DRAWN BY	T. McAdam	A. Marro C.E.G.	PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION		BRIDGE NO.	Borings: 346L/HA/02, 03	
CHECKED BY		C.R. Stroop P.E. G.E.		FIELD INVESTIGATION BY: DATE: 5/31/02	PROJECT ENGINEER		KILOMETER POST	LOG OF TEST BORING 2 of 2	
SIGN OFF DATE					REVISION DATES (PRELIMINARY STAGE ONLY)				

GEOTECHNICAL LOG OF TEST BORINGS SHEET (METRIC) (REV 2/1/00)

ORIGINAL SCALE IN MILLIMETERS FOR REDUCED PLANS

0 10 20 30 40 50 60 70 80 90 100

CU 11277  
EA 080901

DISREGARD PRINTS BEARING  
EARLIER REVISION DATES →

11/13/02

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

USERNAME => -USER- DATE PLOTTED => 12/05/2002 TIME PLOTTED => 10:52:55 AM 1ST SUBMISSION

LAST

**Boring Nos: 349L/HA/01, 02, LA/03**  
 Project Name: I-15 Managed Lanes (Unit 1)  
 Retaining Wall 349L

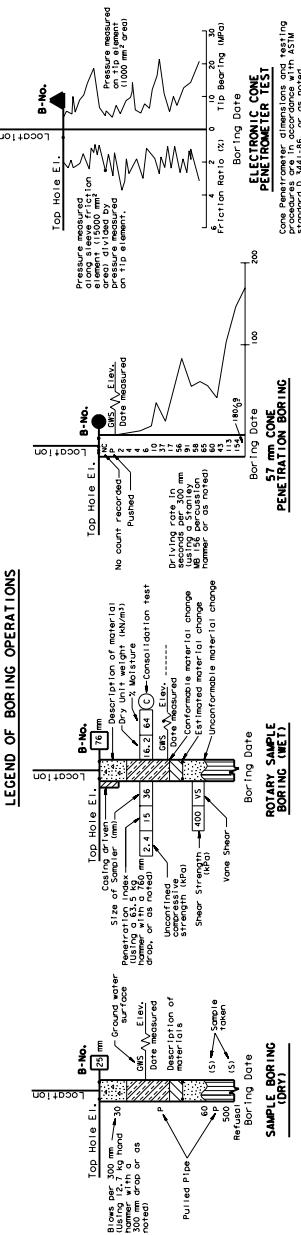


DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
II	SD	15/56	M30.4/M35.4 14.4/15.2	1	1

11/13/02  
 GEOTECHNICAL PROFESSIONAL  
 C.R. Stroop No. 44964 Exp. 3/31/06  
 REGISTERED PROFESSIONAL ENGINEER  
 STATE OF CALIFORNIA

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 Ventura CA 93003



LEGEND OF BORING OPERATIONS

LEGEND OF EARTH MATERIALS	
GRANULAR	CLAYEY SILT
GRAVEL	PEAT, DIRT OR ORGANIC MATTER
SAND	FILL MATERIAL
SILT	COBBLE
CLAY	GEODIS ROCK
SANDY CLAY OR CLAYEY SAND OR SILTY SAND	SEDIMENTARY ROCK
SILTY CLAY	METAMORPHIC

According to the Standard Penetration Test

STP N-value (Blows/0.3m)	Consistency
0-4	Very Loose
5-10	Loose
11-30	Medium Dense
31-50	Dense
>50	Very Dense

Very Soft

Soft

Firm

Stiff

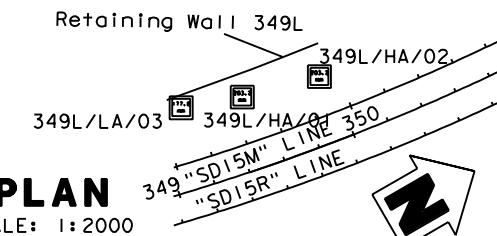
Very Stiff

Hard

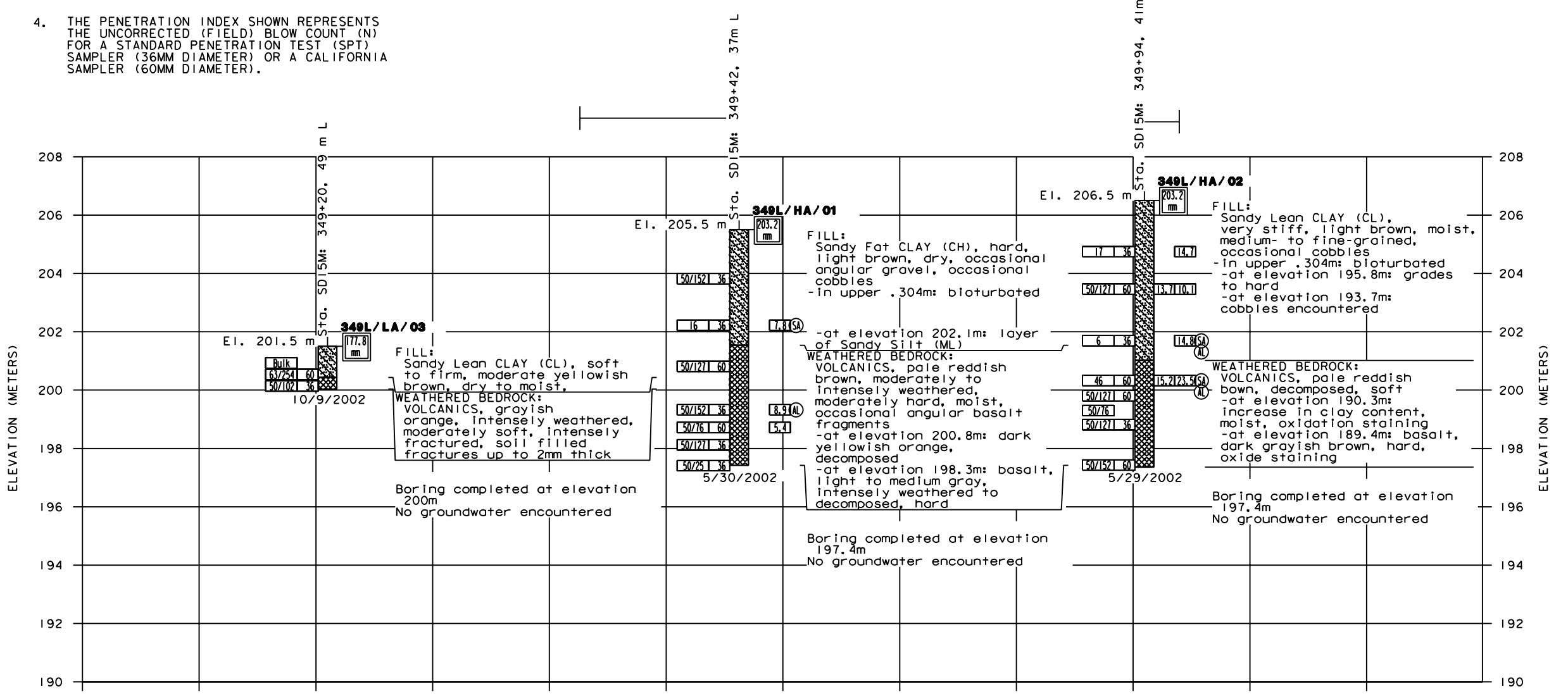
NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

- NOTES:
- THE DESCRIPTIONS AND CLASSIFICATIONS OF ROCK AND/OR SOIL INCLUDING CONSISTENCY AND RELATIVE DENSITY DESCRIPTORS, USED BY THE FIELD PERSONNEL FOR THE EXPLORATION TEST HOLES SHOWN ON THIS SHEET ARE BASED ON THE "SOIL AND ROCK LOGGING CLASSIFICATION MANUAL", OFFICE OF MATERIAL AND FOUNDATIONS (FORMERLY OFFICE OF STRUCTURAL FOUNDATIONS), AUGUST 1996. COPIES OF THIS MANUAL ARE AVAILABLE FOR INSPECTION AND/OR REPRODUCTION SUBJECT TO APPLICABLE OFFICE POLICIES, BY ANY BIDDER OR CONTRACTOR UPON WRITTEN REQUEST.
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 LA = LIMITED ACCESS (SOLID STEM AUGER)
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PLAN  
 SCALE: 1:2000



PROFILE  
 SCALE: HORIZ = 1:200  
 VERT = 1:80



PREPARED FOR THE  
 STATE OF CALIFORNIA  
 DEPARTMENT OF TRANSPORTATION

H. Ontoy, P.E.  
 PROJECT ENGINEER

BRIDGE NO.  
 0  
 KILOMETER POST  
 0

Borings: 349L/HA/01, 02, 349L/LA/03

LOG OF TEST BORING 1 of 1

DESIGN OVERSIGHT

DRAWN BY

S. Velasco  
 C.R. Stroop P.E. G.E.

CHECKED BY

A. Marro C.E.G.

FIELD INVESTIGATION BY:

DATE:

5/31/02

REVISION DATES (PRELIMINARY STAGE ONLY)

EARLIER REVISION DATES

11/13/02

DISREGARD PRINTS BEARING

EARLIER REVISION DATES

11/13/02

REVISION DATES (PRELIMINARY STAGE ONLY)

EARLIER REVISION DATES

11/13/02

REVISION DATES (PRELIMINARY STAGE ONLY)

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11/13/02

REVISION DATES (PRELIMINARY STAGE ONLY)

EARLIER REVISION DATES

11/13/02

REVISION DATES (PRELIMINARY STAGE ONLY)

EARLIER REVISION DATES

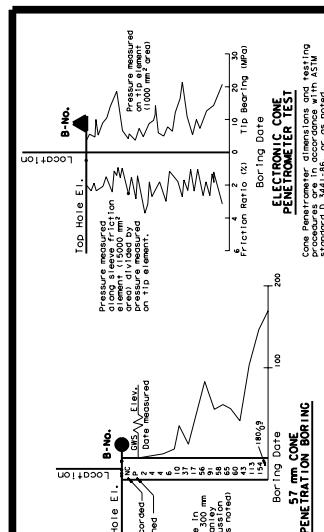
11/13/02

REVISION DATES (PRELIMINARY STAGE ONLY)

EARLIER REVISION DATES

11/13/02

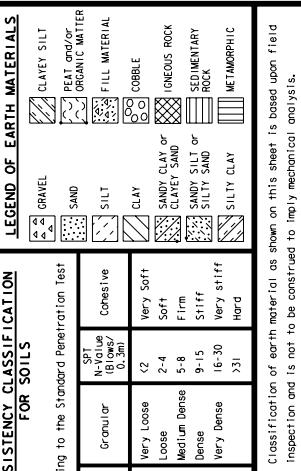
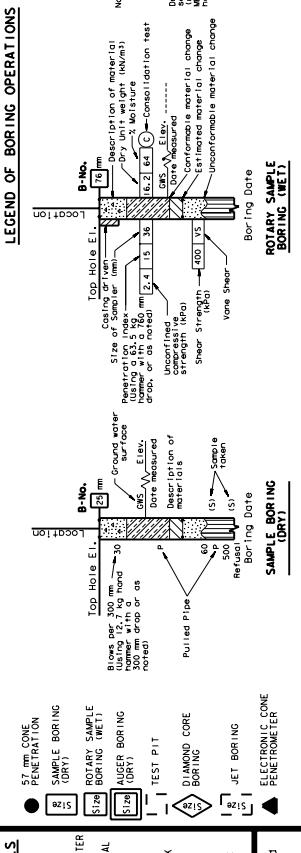
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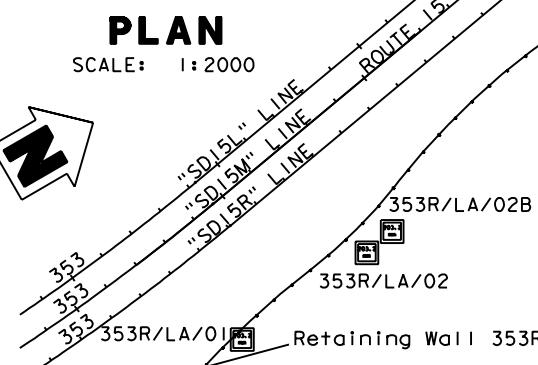
**Boring Nos: 353R/LA/01, 02, 2B**  
Project Name: I-15 Managed Lanes (Unit 1)  
Retaining Wall 357RI

NOTES:

- THE DESCRIPTIONS AND CLASSIFICATIONS OF ROCK AND/OR SOIL INCLUDING CONSISTENCY AND RELATIVE DENSITY DESCRIPTORS, USED BY THE FIELD PERSONNEL FOR THE EXPLORATION TEST HOLES SHOWN ON THIS SHEET ARE BASED ON THE "SOIL AND ROCK LOGGING CLASSIFICATION MANUAL", OFFICE OF MATERIAL AND FOUNDATIONS (FORMERLY OFFICE OF STRUCTURAL FOUNDATIONS), AUGUST 1996. COPIES OF THIS MANUAL ARE AVAILABLE FOR INSPECTION AND/OR REPRODUCTION SUBJECT TO APPLICABLE OFFICE POLICIES, BY ANY BIDDER OR CONTRACTOR UPON WRITTEN REQUEST.
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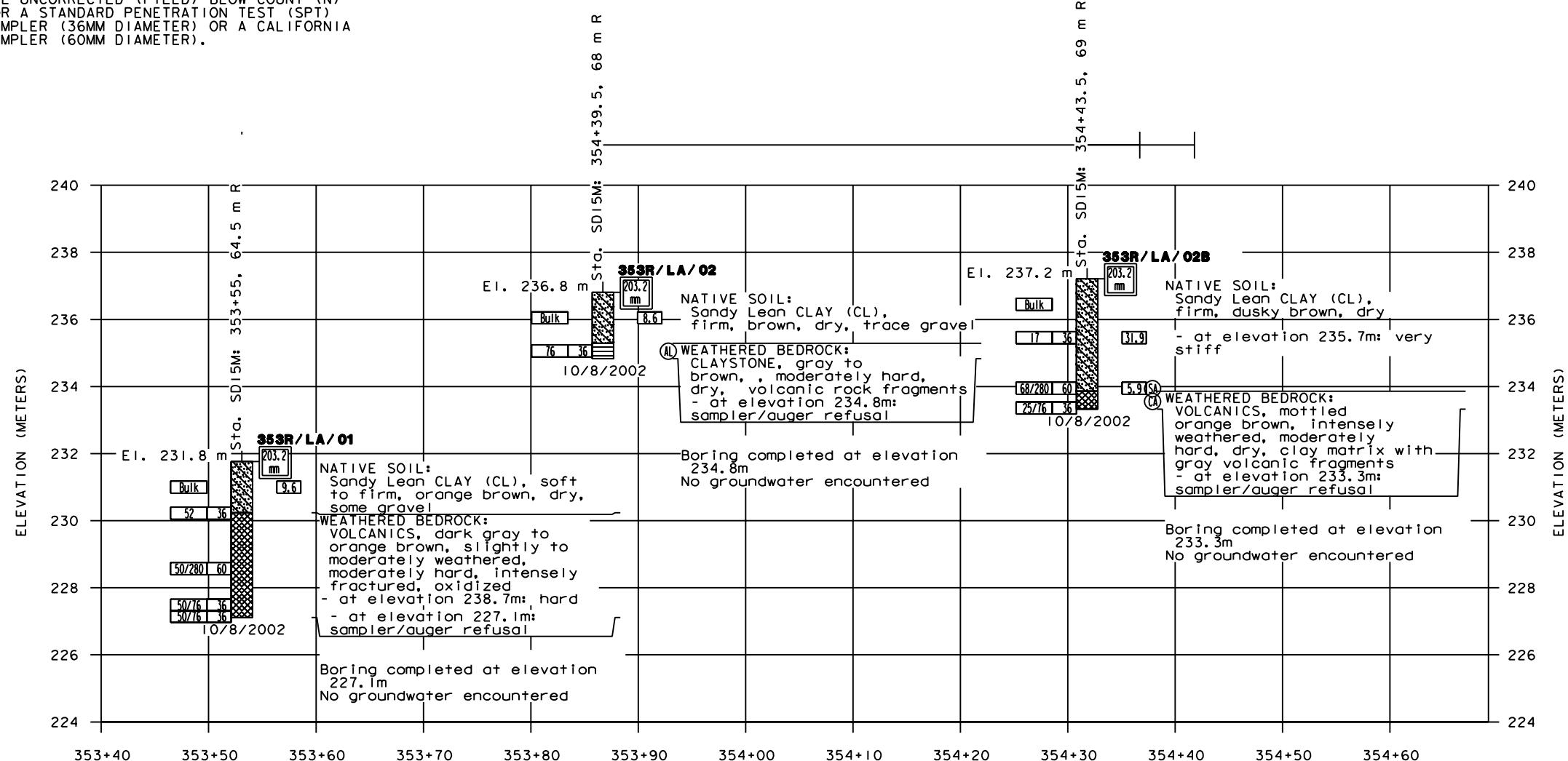
DIST	COUNTY	ROUTE	KILOMETER POST	SHEET NO	TOTAL SHEETS
I	SD	15/56	M30.4/M35.4 14.4/15.2	I	2

GEOTECHNICAL PROFESSIONAL  
C.R. Stroop No. 44964 Exp. 3/31/06

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Ventura CA 93003

**PROFILE**  
SCALE: HORIZ = 1:250  
VERT = 1:80



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**STATE OF CALIFORNIA**  
DEPARTMENT OF TRANSPORTATION

H. Ontoy, P.E.  
PROJECT ENGINEER

BRIDGE NO.  
0  
KILOMETER POST  
0

**Borings: 353R/LA/01, 02, 2B**

**LOG OF TEST BORING 1 of 2**

DESIGN OVERSIGHT  
DRAWN BY T. McAdam  
CHECKED BY C.R. Stroop P.E. G.E.

FIELD INVESTIGATION BY:  
DATE: 10/8/02

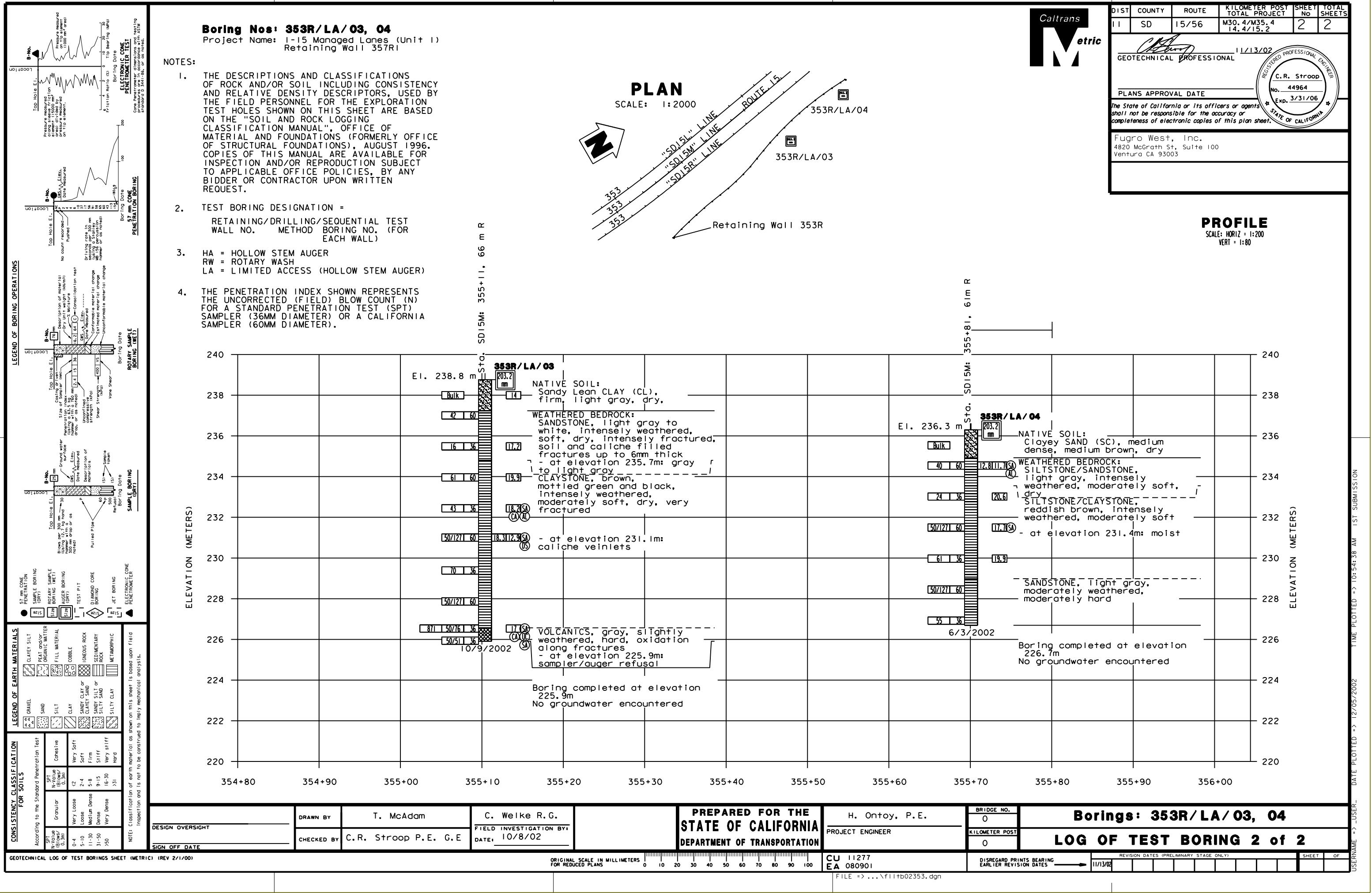
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FOR REDUCED PLANS  
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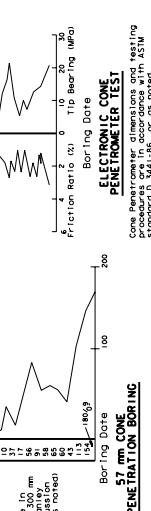
CU 11277  
EA 080901

DISREGARD PRINTS BEARING  
EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)  
11/13/02

SHEET OF  
1 2

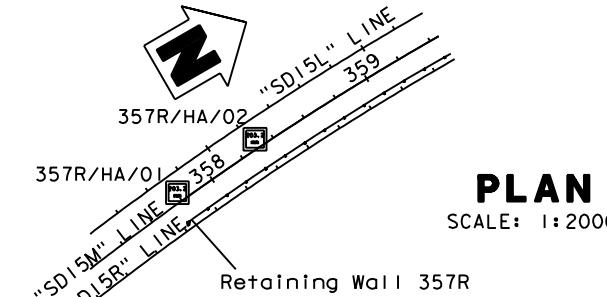




**Boring Nos: 357R/HA/01, 02**  
Project Name: I-15 Managed Lanes (Unit 1)  
Retaining Wall 357R



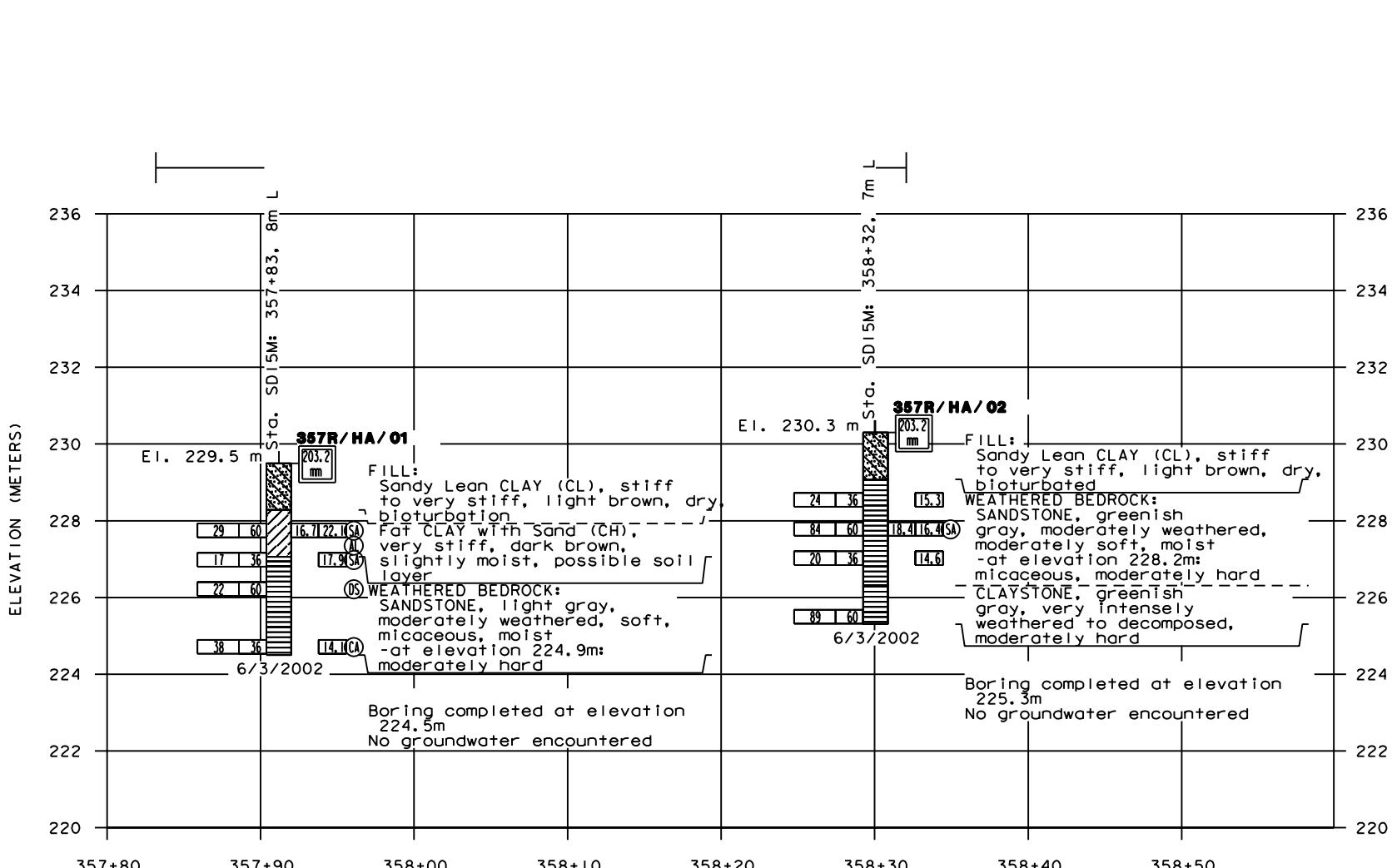
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
II	SD	15/56	M30.4/M35.4 14.4/15.2	1	2
GEOTECHNICAL PROFESSIONAL 11/13/02					
C.R. Stroop No. 44964 Exp. 3/31/06					
REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA					
PLANS APPROVAL DATE					
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**PLAN**  
SCALE: 1:2000

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<b>CONSISTENCY CLASSIFICATION</b>	
For Soils	
According to the Standard Penetration Test	
SPT N-value (Blows/0.3m)	SPT N-value (Blows/0.3m)
0-4	0-4
5-10	5-10
11-30	2-8
31-50	9-15
>50	16-30
	>31

**LEGEND OF TEST BORINGS SHEET (METRIC) (REV 2/1/00)**

DESIGN OVERSIGHT  
DRAWN BY  
CHECKED BY  
SIGN OFF DATE

M. Lobley  
A. Marro C.E.G  
FIELD INVESTIGATION BY:  
DATE: 5/31/02

C.R. Stroop P.E. G.E

H. Ontoy, P.E.

PROJECT ENGINEER

BRIDGE NO.  
0

KILOMETER POST  
0

Borings: 357R/HA/01, 02

LOG OF TEST BORING 1 of 2

ORIGINAL SCALE IN MILLIMETERS  
FOR REDUCED PLANS

0 10 20 30 40 50 60 70 80 90 100

CU 11277  
EA 080901

DISREGARD PRINTS BEARING  
EARLIER REVISION DATES →  
FILE = > ... \cltb01357r.dgn

REVISION DATES (PRELIMINARY STAGE ONLY)

11/13/02

SHEET OF

USERNAME => -USER- DATE PLOTTED => 12/05/2002 TIME PLOTTED => 10:55:10 AM 1ST SUBMISSION

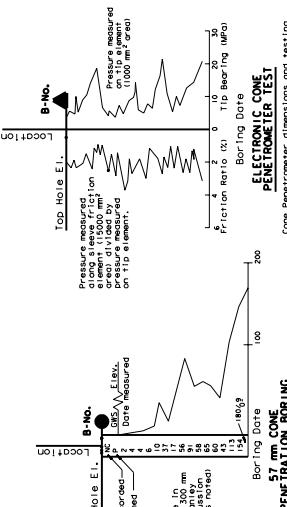


**Boring Nos: 357R1/LA/01, 02**

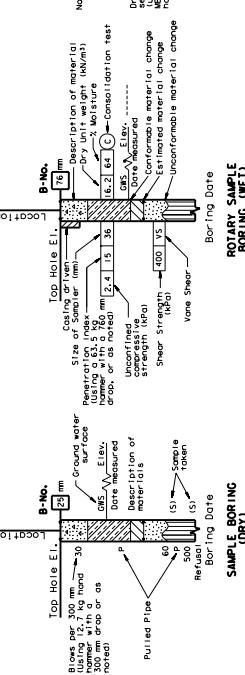
 Project Name: I-15 Managed Lanes (Unit 1)  
 Retaining Wall 357R1

## NOTES:

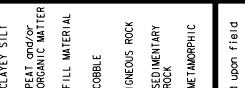
1. THE DESCRIPTIONS AND CLASSIFICATIONS OF ROCK AND/OR SOIL INCLUDING CONSISTENCY AND RELATIVE DENSITY DESCRIPTORS, USED BY THE FIELD PERSONNEL FOR THE EXPLORATION TEST HOLES SHOWN ON THIS SHEET ARE BASED ON THE "SOIL AND ROCK LOGGING CLASSIFICATION MANUAL", OFFICE OF MATERIAL AND FOUNDATIONS (FORMERLY OFFICE OF STRUCTURAL FOUNDATIONS), AUGUST 1996. COPIES OF THIS MANUAL ARE AVAILABLE FOR INSPECTION AND/OR REPRODUCTION SUBJECT TO APPLICABLE OFFICE POLICIES, BY ANY BIDDER OR CONTRACTOR UPON WRITTEN REQUEST.
2. TEST BORING DESIGNATION = RETAINING/DRILLING/SEQUENTIAL TEST WALL NO. METHOD BORING NO. (FOR EACH WALL)
3. HA = HOLLOW STEM AUGER  
RW = ROTARY WASH  
LA = LIMITED ACCESS (HOLLOW STEM AUGER)
4. THE PENETRATION INDEX SHOWN REPRESENTS THE UNCORRECTED (FIELD) BLOW COUNT (N) FOR A STANDARD PENETRATION TEST (SPT) SAMPLER (36MM DIAMETER) OR A CALIFORNIA SAMPLER (60MM DIAMETER).



LEGEND OF BORING OPERATIONS



LEGEND OF EARTH MATERIALS



NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

 DESIGN OVERSIGHT  
 DRAWN BY T. McAdam  
 CHECKED BY C.R. Stroop P.E. G.E.  
 SIGN OFF DATE

 DRAWN BY T. McAdam  
 C. Welke R.G.  
 FIELD INVESTIGATION BY:  
 DATE: 10/8/02

 PREPARED FOR THE  
**STATE OF CALIFORNIA**  
 DEPARTMENT OF TRANSPORTATION

 H. Ontoy, P.E.  
 PROJECT ENGINEER  
 BRIDGE NO.: 0  
 KILOMETER POST: 0

**Borings: 357R1/LA/01, 02**  
**LOG OF TEST BORING 1 of 2**

GEOTECHNICAL LOG OF TEST BORINGS SHEET (METRIC) (REV 2/1/00)

 ORIGINAL SCALE IN MILLIMETERS  
 FOR REDUCED PLANS

0 10 20 30 40 50 60 70 80 90 100

 CU 11277  
 EA 080901

 DISREGARD PRINTS BEARING  
 EARLIER REVISION DATES →

11/13/02

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET OF

DIST	COUNTY	ROUTE	KILOMETER POST	SHEET NO	TOTAL SHEETS
I	SD	15/56	M30.4/M35.4 14.4/15.2	1	2

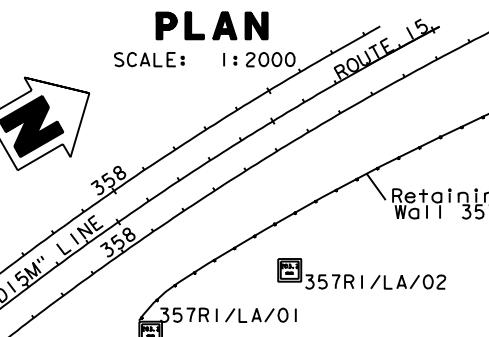
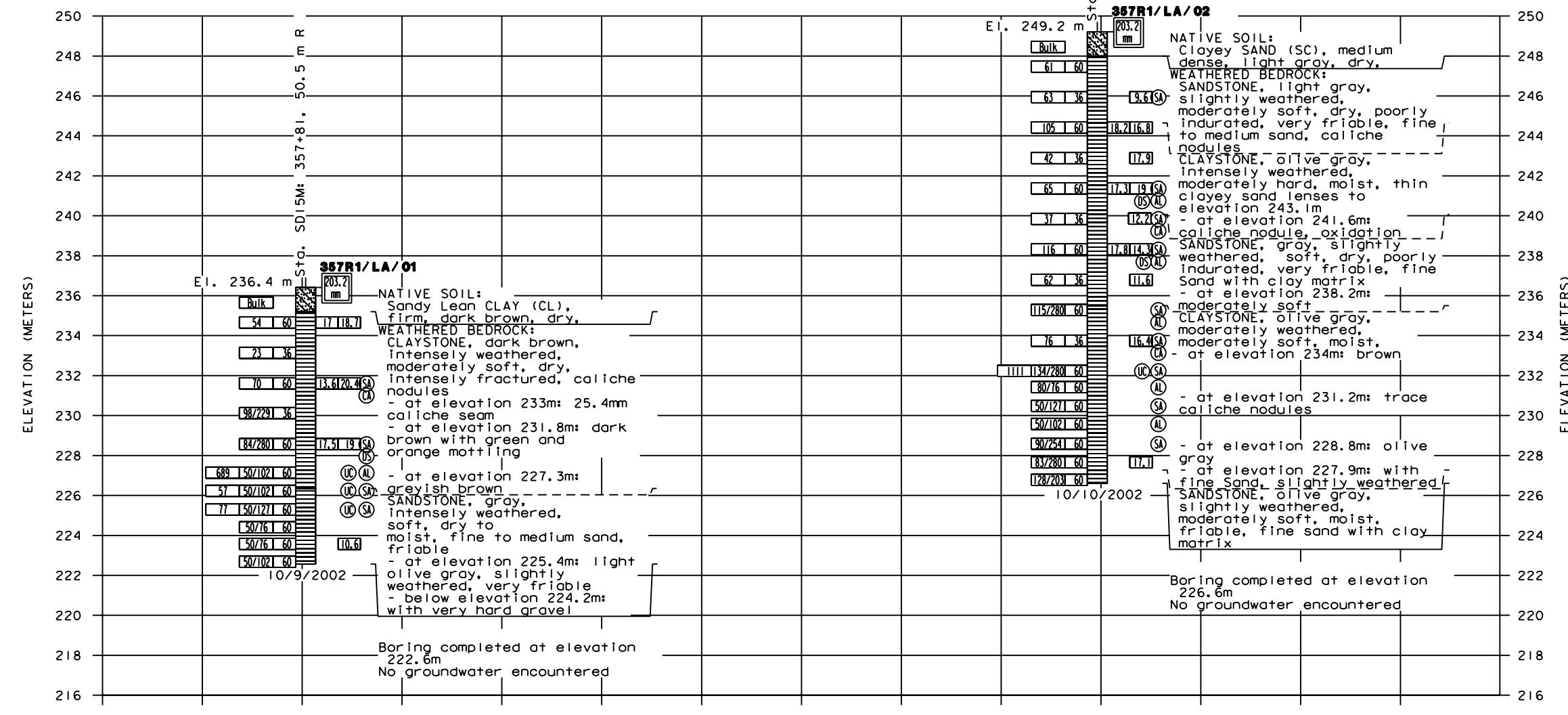
Caltrans Metric

GEOTECHNICAL PROFESSIONAL 11/13/02

C. R. Stroop No. 44964 EXP. 3/31/06

Fugro West, Inc. 4820 McGrath St, Suite 100 Ventura CA 93003

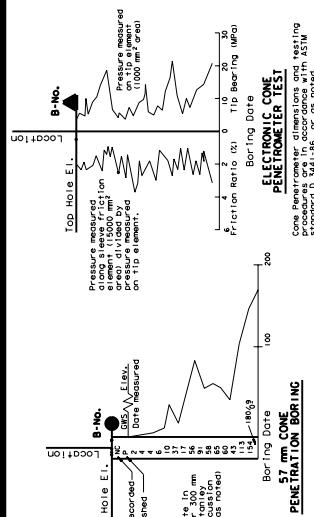
PLANS APPROVAL DATE  
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.


**PROFILE**  
 SCALE: HORIZ = 1:250  
 VERT = 1:125


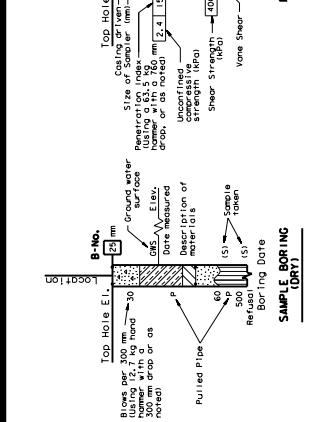
**Boring Nos: 357R1/LA/03, 04, 05**  
 Project Name: I-15 Managed Lanes (Unit 1)  
 Retaining Wall 357R1



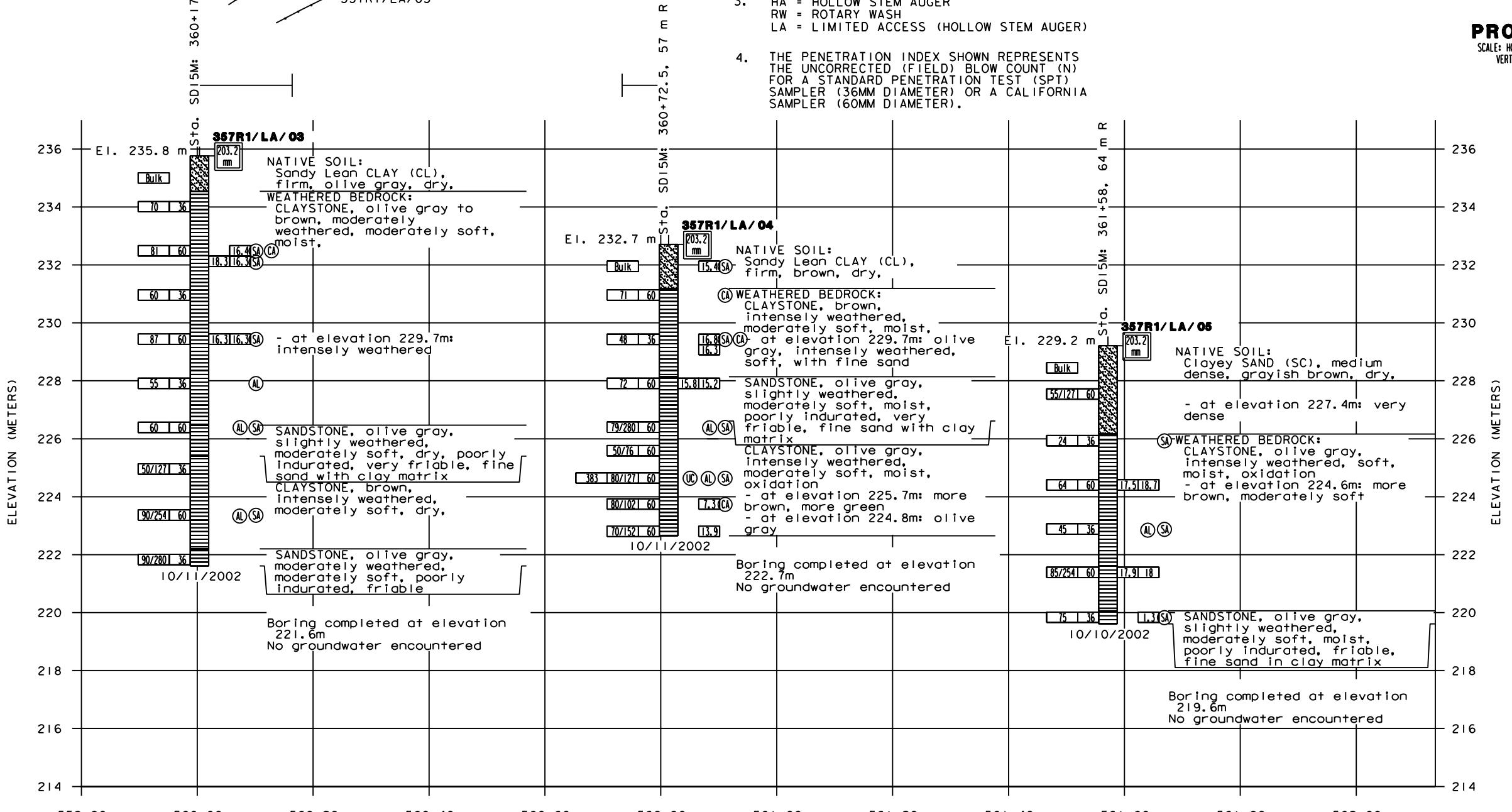
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
II	SD	15/56	M30.4/M35.4 14.4/15.2	2	2
GEOTECHNICAL PROFESSIONAL 11/13/02					
C.R. Stroop No. 44964 EXP. 3/31/06					
PLANS APPROVAL DATE					
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### LEGEND OF BORING OPERATIONS



ELEVATION (METERS)



According to the Standard Penetration Test

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

For SOILS

For ROCKS

For MATERIALS

Legend of Earth Materials

Legend of Soil Consistency

Legend of Soil Classification

Legend of Soil Properties

Legend of Soil Strength

Legend of Soil Permeability

Legend of Soil Compaction

Legend of Soil Density

Legend of Soil Hardness

Legend of Soil Thickness

Legend of Soil Weight

Legend of Soil Volume

Legend of Soil Area

Legend of Soil Length

Legend of Soil Width

Legend of Soil Depth

Legend of Soil Thickness

Legend of Soil Weight

Legend of Soil Volume

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Legend of Soil Volume

Legend of Soil Area

Legend of Soil Length

Legend of Soil Width

Legend of Soil Depth

Legend of Soil Thickness

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
II	SD	15/56	M30.4/M35.4 14.4/15.2	1	1

*[Signature]* 11/13/02  
GEOTECHNICAL PROFESSIONAL  
C.R. Stroop No. 44964 Exp. 3/31/06  
REGISTERED PROFESSIONAL ENGINEER  
STATE OF CALIFORNIA

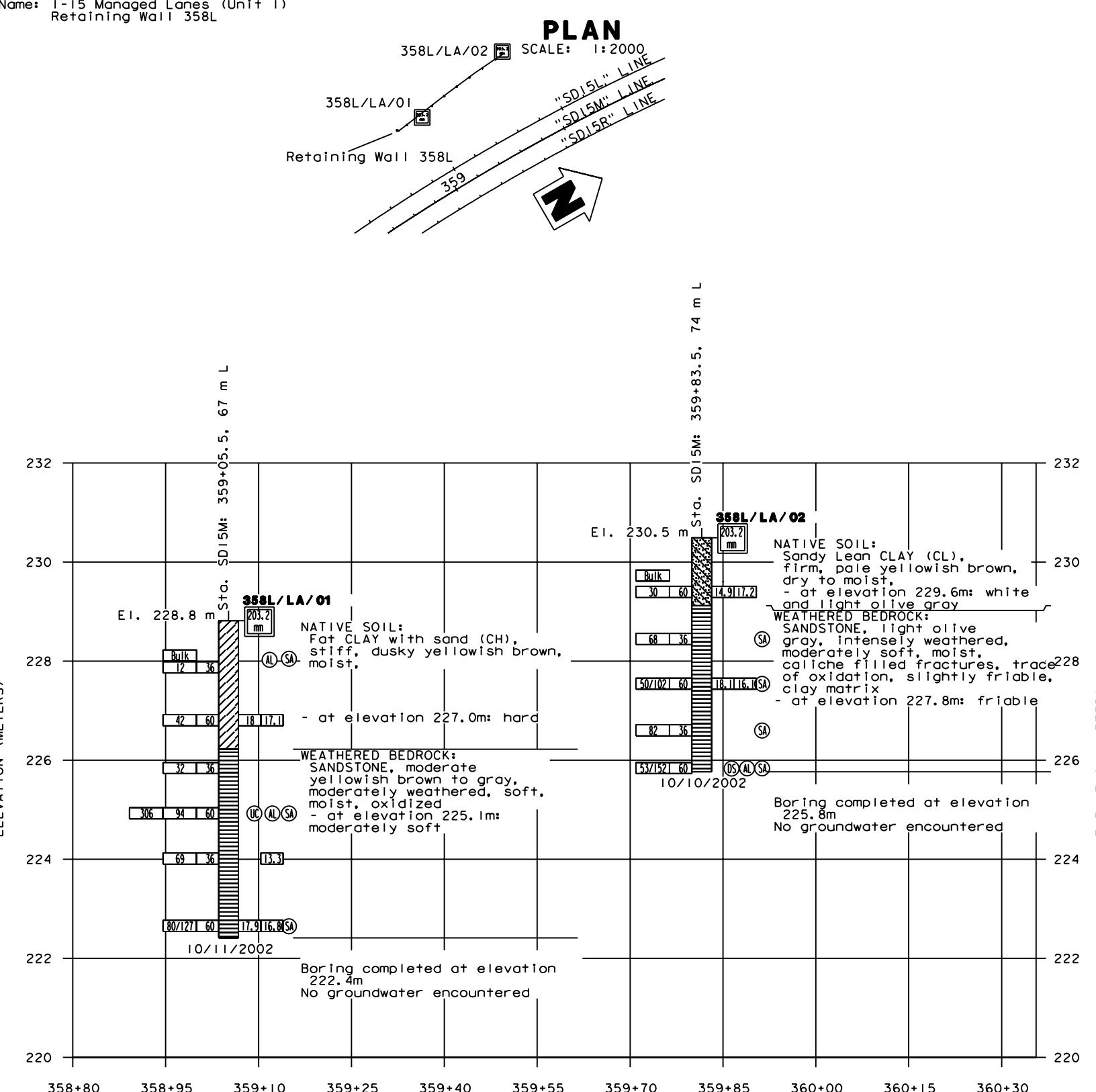
PLANS APPROVAL DATE  
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Fugro West, Inc.  
4820 McGrath St., Suite 100  
Ventura CA 93003

NOTES:

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- HA = HOLLOW STEM AUGER  
RW = ROTARY WASH  
LA = LIMITED ACCESS (HOLLOW STEM AUGER)
- THE PENETRATION INDEX SHOWN REPRESENTS THE UNCORRECTED (FIELD) BLOW COUNT (N) FOR A STANDARD PENETRATION TEST (SPT) SAMPLER (36MM DIAMETER) OR A CALIFORNIA SAMPLER (60MM DIAMETER).

**PROFILE**  
SCALE: HORIZ = 1:400 VERT = 1:50



**LEGEND OF BORING OPERATIONS**

77 mm CONE PENETRATION	SAMPLE BORING
ROTARY SAMPLE (DRY)	ROTARY BORING
HOLLOW STEM AUGER BORING	TEST PIT
DIAMOND CORE BORING	JET BORING
ELECTRONIC CONE PENETROMETER TEST	ROTARY WASH (WET)

**LEGEND OF EARTH MATERIALS**

GRAVEL	CLAYEY SILT	PEAT, DIRT OR ORGANIC MATTER	SAND	SILT	CLAY	SANDY CLAY OR CLAYEY SAND	SANDY SILT OR SILTY SAND	SILTY CLAY	COBBLE	GENOIS ROCK	SEDIMENTARY ROCK	NEOMORPHIC
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According to the Standard Penetration Test

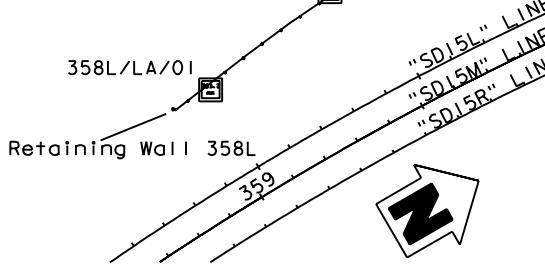
SPT N-value (Blows/0.3m)	Numerical value	Consistency	
0-4	Very loose	C2	Very Soft
5-10	Loose	C2-4	Soft
11-30	Dense	5-8	Firm
31-50	Dense	9-15	Stiff
>50	Very Dense	16-30	Very stiff
		>31	Hard

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

Boring Nos: 358L/LA/01, 02  
Project Name: I-15 Managed Lanes (Unit 1)  
Retaining Wall 358L

## PLAN

SCALE: 1:2000



Caltrans  
Metric

PREPARED FOR THE  
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

BRIDGE NO.  
0  
PROJECT ENGINEER  
H. Ontoy, P.E.

KILOMETER POST  
0

Borings: 358L/LA/01, 02

LOG OF TEST BORING 1 of 1

CU 11277  
EA 080901

DISREGARD PRINTS BEARING  
EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)  
11/13/02

USERNAME => -USER- DATE PLOTTED => 12/05/2002 TIME PLOTTED => 10:56:26 AM 1ST SUBMISSION

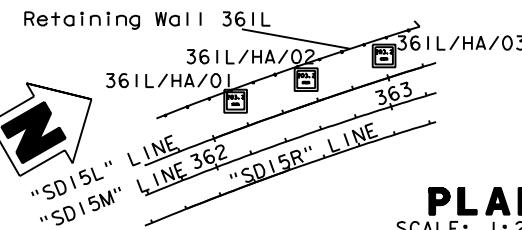
LAST PLOT

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
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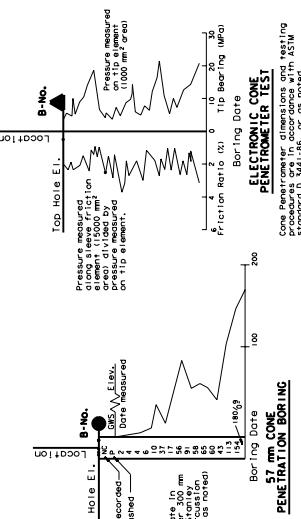
11/13/02  
GEOTECHNICAL PROFESSIONAL  
C.R. Stroop  
No. 44964  
Ex. 3/31/06  
REGISTERED PROFESSIONAL ENGINEER  
STATE OF CALIFORNIA

PLANS APPROVAL DATE  
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

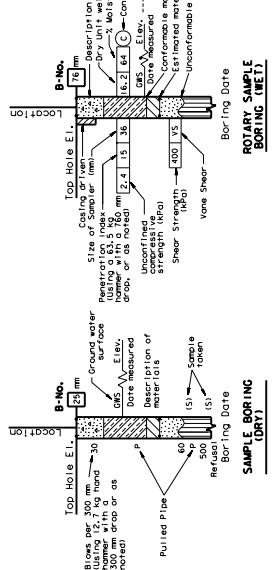
Fugro West, Inc.  
4820 McGrath St, Suite 100  
Ventura CA 93003



PLAN  
SCALE: 1:2000



LEGEND OF BORING OPERATIONS



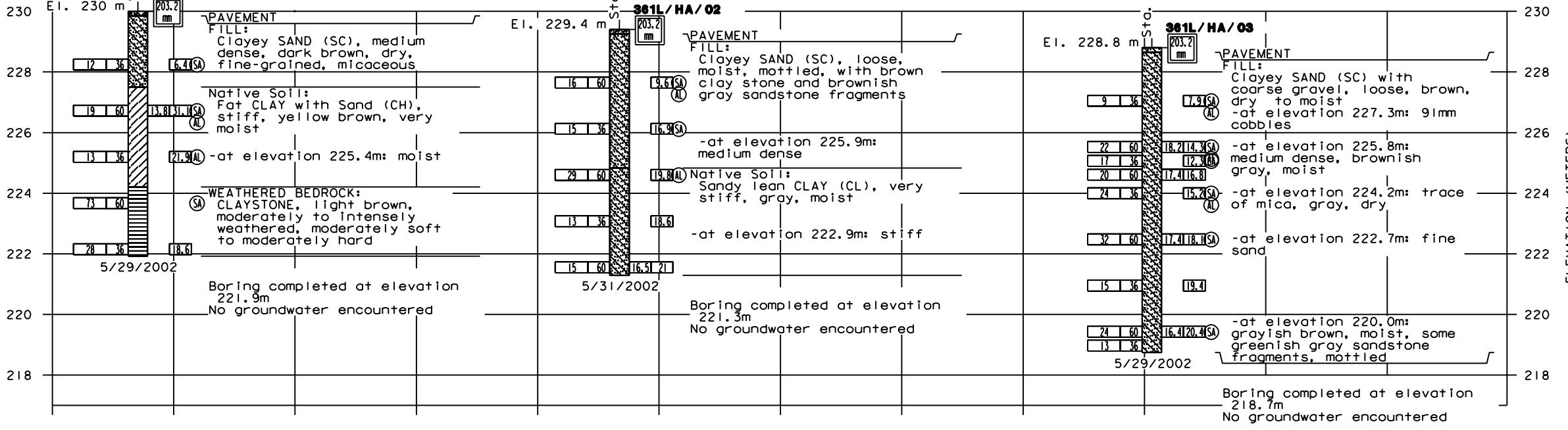
NOTES:

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- HA = HOLLOW STEM AUGER  
RW = ROTARY WASH  
LA = LIMITED ACCESS (HOLLOW STEM AUGER)
- THE PENETRATION INDEX SHOWN REPRESENTS THE UNCORRECTED (FIELD) BLOW COUNT (N) FOR A STANDARD PENETRATION TEST (SPT) SAMPLER (36MM DIAMETER) OR A CALIFORNIA SAMPLER (60MM DIAMETER).

SD15M: 362+22. 30m L  
SD15M: 362+61. 29m L  
SD15M: 362+04. 28m L

ROTARY SAMPLE (WET)

ELEVATION (METERS)



ELEVATION (METERS)

362+00 362+10 362+20 362+30 362+40 362+50 362+60 362+70 362+80 362+90 363+00 363+10

5/29/2002

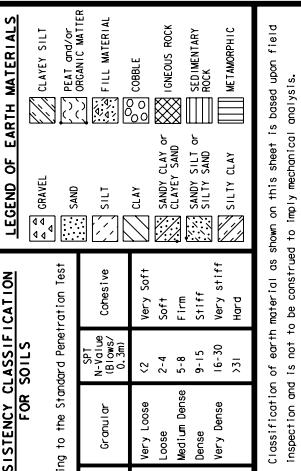
5/31/2002

5/29/2002

Boring completed at elevation 221.9m  
No groundwater encountered

Boring completed at elevation 221.3m  
No groundwater encountered

Boring completed at elevation 218.7m  
No groundwater encountered



NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

CONSISTENCY CLASSIFICATION  
FOR SOILS

According to the Standard Penetration Test	
STP N-value (Blows/ 0.3m)	SPT N-value (Blows/ 0.3m)
0-4	Very Soft
5-10	Loose
11-30	Medium Dense
31-50	Dense
>50	Very Dense

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

Very Soft

Soft

Firm

Stiff

Very Stiff

Hard

Very loose

Loose

Medium

Dense

Very Dense

0.3m

0.6m

1.2m

1.8m

2.4m

3.0m

3.6m

4.2m

4.8m

5.4m

6.0m

6.6m

7.2m

7.8m

8.4m

9.0m

9.6m

10.2m

10.8m

11.4m

12.0m

12.6m

13.2m

13.8m

14.4m

15.0m

15.6m

16.2m

16.8m

17.4m

18.0m

18.6m

19.2m

19.8m

20.4m

21.0m

21.6m

22.2m

22.8m

23.4m

24.0m

24.6m

25.2m

25.8m

26.4m

27.0m

27.6m

28.2m

28.8m

29.4m

30.0m

30.6m

31.2m

31.8m

32.4m

33.0m

33.6m

34.2m

34.8m

35.4m

36.0m

36.6m

37.2m

37.8m

38.4m

39.0m

39.6m

40.2m

40.8m

41.4m

42.0m

42.6m

43.2m

43.8m

44.4m

45.0m

45.6m

46.2m

46.8m

47.4m

48.0m

48.6m

49.2m

49.8m

50.4m

51.0m

51.6m

52.2m

52.8m

53.4m

54.0m

54.6m

55.2m

55.8m

56.4m

57.0m

57.6m

58.2m

58.8m

59.4m

60.0m

60.6m

61.2m

61.8m

62.4m

63.0m

63.6m

64.2m

64.8m

65.4m

66.0m

66.6m

67.2m

67.8m

68.4m

69.0m

69.6m

70.2m

70.8m

71.4m

72.0m

72.6m

73.2m

73.8m

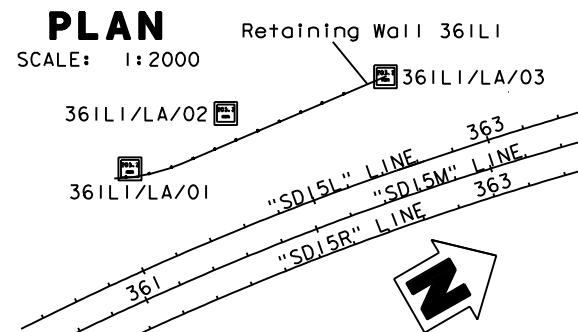
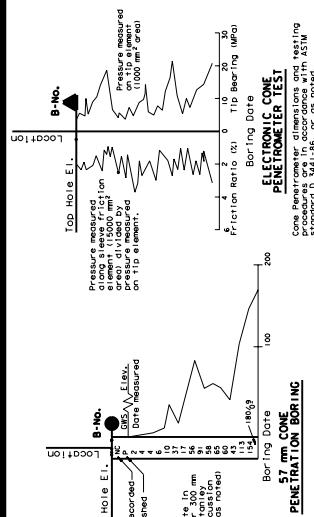
74.4m

75.0m

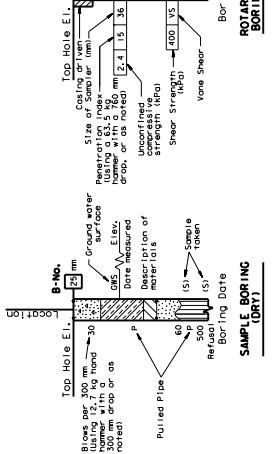
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
II	SD	15/56	M30.4/M35.4 14.4/15.2	1	1
C.R. Stroop 11/13/02 GEOTECHNICAL PROFESSIONAL REGISTERED PROFESSIONAL ENGINEER No. 44964 * EXP. 3/31/06 * STATE OF CALIFORNIA					
PLANS APPROVAL DATE The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					
Fugro West, Inc. 4820 McGrath St., Suite 100 Ventura CA 93003					



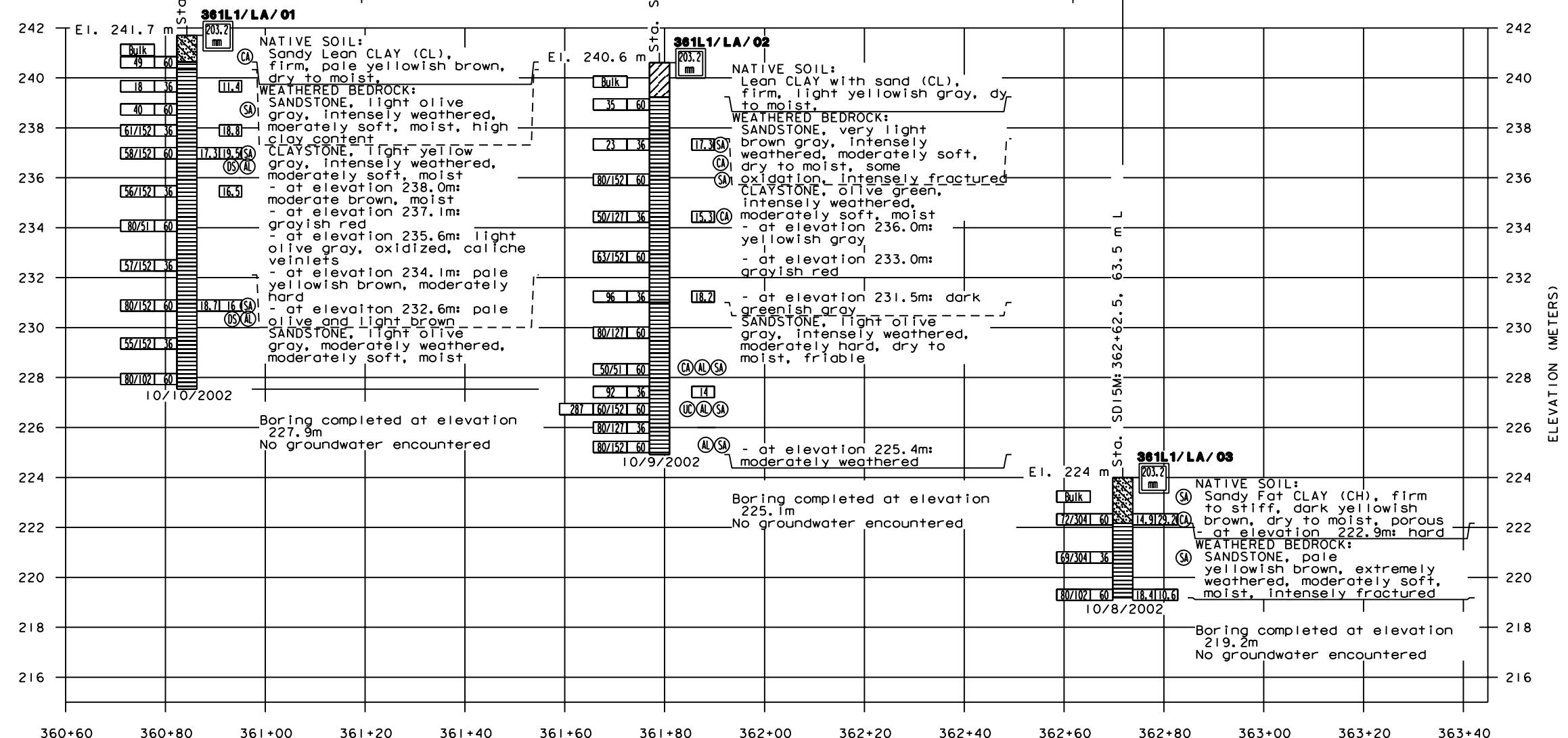
**Boring Nos: 361L1/LA/01, 02, 03**  
Project Name: I-15 Managed Lanes (Unit 1)  
Retaining Wall 361L1



LEGEND OF BORING OPERATIONS



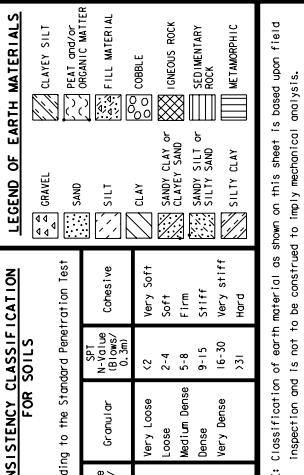
ELEVATION (METERS)



NOTES:

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**PROFILE**  
SCALE: HORZ = 1:500  
VERT = 1:100



CONSISTENCY CLASSIFICATION  
FOR SOILS

GEOTECHNICAL LOG OF TEST BORINGS SHEET (METRIC) (REV 2/1/00)

DESIGN OVERSIGHT

DRAWN BY

C. Welke R.G.

FIELD INVESTIGATION BY:

C.R. Stroop P.E. G.E.

DATE: 10/8/02

SIGNED OFF DATE

**PREPARED FOR THE  
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION**

H. Ontoy, P.E.  
PROJECT ENGINEER

BRIDGE NO.

0

KILOMETER POST

0

**Borings: 361L1/LA/01, 02, 03**  
**LOG OF TEST BORING 1 of 1**

REVISION DATES (PRELIMINARY STAGE ONLY)

SHEET

OF

USERNAME => -USER- DATE PLOTTED => 12/05/2002 TIME PLOTTED => 10:56:46 AM 1ST SUBMISSION

DATE PLOTTED

TIME PLOTTED

1ST SUBMISSION

CU 11277  
EA 080901

DISREGARD PRINTS BEARING  
EARLIER REVISION DATES

11/13/02

11/13/02

11/13/02

11/13/02

11/13/02

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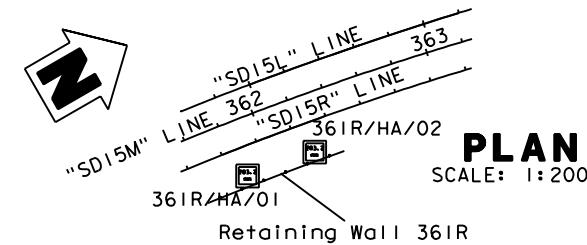
11/13/02

Boring Nos: 361R/HA/01, 02

Project Name: I-15 Managed Lanes (Unit 1)  
Retaining Wall 361R



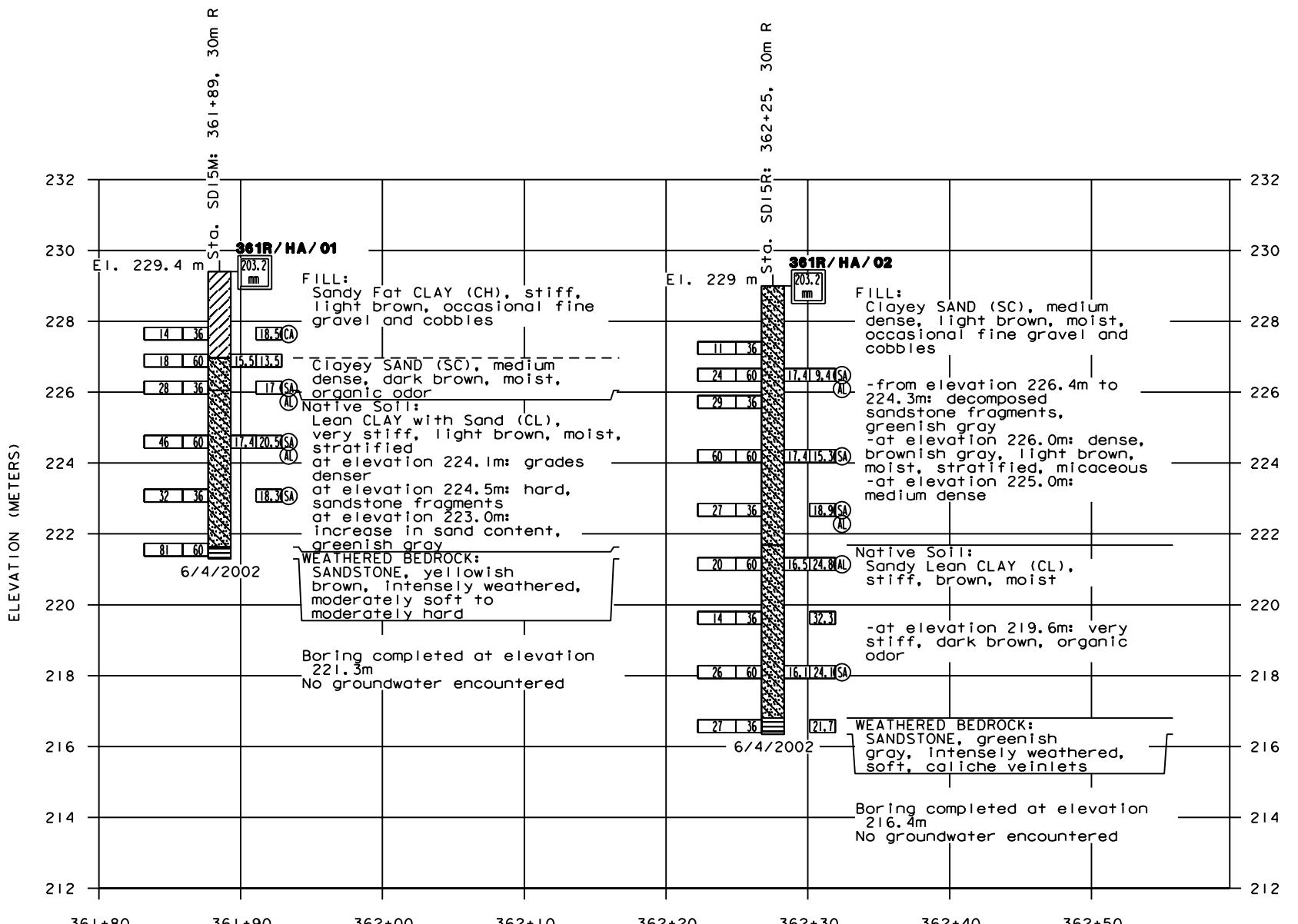
DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET NO	TOTAL SHEETS
I	SD	15/56	M30.4/M35.4 14.4/15.2	I	I
C.R. Stroop 11/13/02 GEOTECHNICAL PROFESSIONAL					
PLANS APPROVAL DATE The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.					
Fugro West, Inc. 4820 McGrath St, Suite 100 Ventura CA 93003					



PLAN  
SCALE: 1:2000

NOTES:

- THE DESCRIPTIONS AND CLASSIFICATIONS OF ROCK AND/OR SOIL INCLUDING CONSISTENCY AND RELATIVE DENSITY DESCRIPTORS, USED BY THE FIELD PERSONNEL FOR THE EXPLORATION TEST HOLES SHOWN ON THIS SHEET ARE BASED ON THE "SOIL AND ROCK LOGGING CLASSIFICATION MANUAL", OFFICE OF MATERIAL AND FOUNDATIONS (FORMERLY OFFICE OF STRUCTURAL FOUNDATIONS), AUGUST 1996. COPIES OF THIS MANUAL ARE AVAILABLE FOR INSPECTION AND/OR REPRODUCTION SUBJECT TO APPLICABLE OFFICE POLICIES, BY ANY BIDDER OR CONTRACTOR UPON WRITTEN REQUEST.
- TEST BORING DESIGNATION = RETAINING/DRILLING/SEQUENTIAL TEST WALL NO. METHOD BORING NO. (FOR EACH WALL)
- HA = HOLLOW STEM AUGER  
RW = ROTARY WASH  
LA = LIMITED ACCESS (HOLLOW STEM AUGER)
- THE PENETRATION INDEX SHOWN REPRESENTS THE UNCORRECTED (FIELD) BLOW COUNT (N) FOR A STANDARD PENETRATION TEST (SPT) SAMPLER (36MM DIAMETER) OR A CALIFORNIA SAMPLER (60MM DIAMETER).



PROFILE  
SCALE: HORIZ = 1:200  
VERT = 1:80

According to the Standard Penetration Test  
SPT N-value (Blows per 0.3m)

GEOTECHNICAL LOG OF TEST BORINGS SHEET (METRIC) (REV 2/1/00)

For Soils  
According to the Standard Penetration Test  
SPT N-value (Blows per 0.3m)

NOTE: Classification of earth material as shown on this sheet is based upon field inspection and is not to be construed to imply mechanical analysis.

DESIGN OVERSIGHT

SIGN OFF DATE

DRAWN BY

CHECKED BY

M. Lobley

C.R. Stroop P.E. G.E.

A. Marro C.E.G

FIELD INVESTIGATION BY:  
DATE: 5/31/02

PROJECT ENGINEER

H. Ontoy, P.E.

BRIDGE NO.

0

KILOMETER POST

0

PREPARED FOR THE  
STATE OF CALIFORNIA  
DEPARTMENT OF TRANSPORTATION

Borings: 361R/HA/01, 02  
LOG OF TEST BORING 1 of 1

ORIGINAL SCALE IN MILLIMETERS  
FOR REDUCED PLANS

0 10 20 30 40 50 60 70 80 90 100

CU 11277  
EA 080901

DISREGARD PRINTS BEARING  
EARLIER REVISION DATES →

REVISION DATES (PRELIMINARY STAGE ONLY)

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USERNAME => -USER- DATE PLOTTED => 12/05/2002 TIME PLOTTED => 10:57:26 AM 1ST SUBMISSION